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MONTHLY REPORT

OF

THE AGRICULTURAL DEPARTMENT

FOR

JUNE AND JULY,

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MONTHLY REPORT.

DEPARTMENT OF AGRICULTURE,
Washington, July, 1865.

The wheat is now being harvested, and, although the returns of the correspondents are not later than the first of June, except from Indiana, yet it is probable that a good crop will be the result. Its quality will not be equal, perhaps, to that of last year, but still fair. In many localities rust and the chinch bug may seriously injure the quality and amount of their crops, but it is believed that the *general* crop will be sufficient to yield a large amount for exportation.

Taking the estimates of the last wheat crop as made by this department to be correct, and comparing the *receipts* at leading commercial points for the past twelve months with those of the preceding year for the same months, it is obvious there must be a good deal of last year's crop on hand. If so, the means of supplying any European demand will be ample, and it is to be hoped that an increased export of wheat and other produce will keep pace with the increased imports, chiefly of dry goods. The nation can ill spare its specie now.

What the foreign demand will be for wheat and flour cannot yet be seen with any certainty, but the latest account of the foreign harvests are more favorable for an increased demand than they have been heretofore. This account will be found in the present report under the head of *The Crops and Prices in Great Britain and Europe.*

The corn crop was planted late, but the rains have generally been favorable, and the present warm and moist weather is bringing it forward most satisfactorily. The anxiety for a large corn crop is greater than in ordinary times, for the country feels the necessity of a great increase of farm stock.

The oats crop is everything, at this time, that could be desired. The wet weather has been most favorable to it, and the absence of cool, clear nights, heavy dews, and hot days has kept away the rust. Here there is no indication of such nights, and the probability is that in the next report we can rejoice together over an abundant oats crop.

The potato has escaped the injuries from potato bugs much better than usual. In some localities a new enemy has appeared, and specimens have been forwarded to the department. It is a large beetle, called the ten-lined or ten-striped spearman, and appears to be much more numerous this season than last. It destroys the leaves of the potato, tomato, and other vegetables. Its eggs are hatched about the middle of June, and the worm rapidly passes through the larva state, when it burrows in the ground and reappears in the beetle form. All these changes take place in about six weeks. When not abundant they can

be picked off, but, where numerous, tobacco water sprinkled over the plants is recommended, also whale oil soapsuds. Added to these some turpentine might be found useful. But the recent weather has been so favorable that the injured plants have rapidly recovered, so that the present prospect of a good potato yield is promising.

All other crops, both fall and spring sown and planted, are not less favorable than those mentioned, and I unite with a correspondent in saying that, should the remainder of the season be equally as favorable as the month of June, the year 1865 may truly be called a year of plenty.

The abundance of pastures has increased the amount of cheese and butter. The importance of these, especially in view of the increasing foreign demand, fully justifies the consideration given to them in the reports of this department. The leading article in the present number on the cheese dairy is demanded by the efforts now making to place cheese making on a basis that will result in such uniformity of manufacture and excellence of quality that, in the increased foreign demand on account of its superiority, our dairymen will always meet with remunerating prices. The article will be interesting to cheese-makers generally, even to those who make but for their own use; for the particulars dwelt upon, as essential to good cheese production, are important to the improvement of that also which is intended to be kept for a short time only.

The season has been one of the best ever known for the growth of the grasses in every part of all the States which report to the department. The hay crop is the largest yet raised. The hay harvest is later in the western than in the eastern States, and hence the amount and quality of the hay crop cannot yet be stated. But with the promise of a most excellent corn and oat crop, and an abundant hay crop, our farmers will be in a condition to make every effort to increase their farm stock, and I again urge them to do so, well satisfied that in such direction of their industry they will meet most success.

The fruits are not so uniformly good. The canker-worm has been very injurious to the apple trees in many places. Severe frosts, near the middle of May, and wet weather were very unfavorable to peaches in the western States. But the eastern and middle States are more fortunate, and there the fruits of all kinds are in good condition.

The blessings of peace have fallen upon the country, and again we are a united people, not in peace, merely, but, I trust, in good will too. Heretofore it has not been in the power of this department to hold that pleasant and profitable intercourse with the agriculturists of the south that it has with those of the other sections of the Union; but, looking forward to the time when we should be one people, it has upheld the cotton of the south as invincible to all the opposition of the cotton grown elsewhere in the world, and shielded the tobacco leaf against a proposed taxation that would have destroyed its export trade. The rapid pacification of the south will soon admit a mail communication that will enable me to appoint regular correspondents in the different counties, and to add to the States, whose crops are now regularly reported, every southern State, and to distribute into each one its due proportion of seeds and reports.

At its last session Congress, in anticipation of this peace, increased the appropriation for the purchase of seeds from thirty thousand dollars to sixty thousand dollars, well knowing that the south would need much almost all kinds of seeds. To distribute these as fast as the mail facilities find their way to the counties of the south, I ask those interested to open a correspondence with me, that they may receive the seeds, and suggest the names of persons who will be prompt and efficient regular correspondents.

I have just received samples of sorghum seed from China, and a portion of the lots they represent has arrived. These samples are mostly of new varieties, quite different, apparently, from any yet brought to this country. One has a loose and long panicle, with light-colored seed; another has very short panicles, with large, round, reddish-colored seed, but the head large and long, and heavy with seed; and a third has dark, brown-colored seed, the panicles and head resembling the last, except that the head is not quite so long. These samples indicate a pure seed and vigorous growing plants.

These seeds will be distributed early next winter. Samples of dark and light colored upland rice have also been received from China, which will be sent out in due time.

ISAAC NEWTON, *Commissioner.*

THE DAIRY.

Second annual report of the New York State Cheese Manufacturers' Association.

In January last, and at Utica, New York, this association held its annual meeting. The factories represented embrace about 104,000 cows, most of which are in New York; a few are in Ohio and Massachusetts. The report before us is the second one, and embodies much useful information, chiefly from the pen of X. A. WILLARD, agricultural editor of the *Utica Morning Herald*, whose zeal and ability in behalf of the cheese dairy are worthy the highest praise.

In reviewing the proceedings of this association, and taking from its present and past reports such matter as is most important to the cheese-making branch of the dairy, we notice first the

HISTORY OF THE ASSOCIATION.

About twelve years ago, Jesse Williams, a dairyman, near Rome, Oneida county, New York, gave his entire attention to manufacturing cheese, not only from his own but others' cows in his immediate vicinity. It was the first step taken to separate the production of the milk from its manufacture into cheese. Those who have studied into the progress of manufactures by the division of labor will see the importance of this movement. The mind, not perplexed by numerous details, can master and improve the fewer; it can inquire into and successfully oppose the processes of a manufacture against which, before such division, it could not compete. The manufacture of cheese is one involving chemical combinations, and therefore demands that care in its different processes which will not allow attention to other objects. To unite the manufacture of cheese with the operations of the farm, the care of cows and their milking, must result in leaving much to chance which should be invariably accomplished through skill, and allows no time to compete against a superior article by the study of the processes of its manufacture.

The superiority of the cheese made by Mr. Williams attracted attention to his system. Large quantities of it, having uniform quality, color, and flavor, commended it to purchasers, and this increased demand led to increased market value. The example thus set was followed by others, until now the factories embrace the best cheese districts in the State of New York, and are rapidly extending into other States. The State associations will soon unite to form a national one, under which this great interest will assume a greater progress and power.

Among the proceedings of this association, in January last, is the adoption of a resolution relative to the decease of Mr. Williams, which we republish, in honor of one so deserving of eulogy, for usefulness in the pursuits of labor is worthy the honors we bestow on those who have benefited their fellow-men in other pursuits.

The association adopted the following preamble and resolution:

"Whereas it has pleased Divine Providence to take from among us, and from his field of influence, Jesse Williams, the pioneer of the cheese factory system, who has for many years been known as one of the first cheese manufacturers and one of the kindest and most honored of men; and whereas his memory is especially cherished by every member of the New York Cheese Manufacturers' Association, and his name and influence had so much to do with forming this organization: now, therefore,

"*Resolved*, That in the death of Jesse Williams we appreciate and feel that this association has lost a kind and efficient friend and adviser, and the cheese factory system a distinguished light and guide."

The subjects discussed at this meeting are important, and have reference to the quality of the milk, and the different processes in cheese-making. As regards the first, the main question considered was—

WHAT IS THE BEST BREED OF COWS FOR THE DAIRY?

Mr. Matoon, of Vienna, having offered a resolution declaring that the native cows are the best and most profitable for the dairy, said:

"He had not had experience to decide positively, but his observation had led him to the conclusion that neither the Devon nor Durham cows were as good milkers as the natives."

Mr. Moore, of New Hartford, said: "That he had raised calves of all bloods—Devons, Durhams, Ayrshires, Alderneys—and grades for dairy purposes. They were raised together, and had the same feed and treatment. The Devons, he found, matured early, and would give more milk than the natives for a few seasons; but after five or six years the natives are much the better. He found the grades between Durhams and natives, and Devons and natives, to be an improvement on the full-bloods. The Alderney was the best milker of all, and the Ayrshire was good. In answer to a question, Mr. Moore replied that the Alderney required much more care than the native, which rendered her unprofitable."

Mr. Chapman, of Oneida Lake, "had milked full-blood Devons fifteen or sixteen years, and the grades between Devons and natives; had also had experience with grade Ayrshire cows, crosses between native cows and full-blood Ayrshire bulls. There had been a great deal lost by farmers putting large-framed cattle on poor feed. The full-blood Durhams should not be put on poor pasturage; the Devons are the cows for such feed. Where cows are slopped, the Devons were also probably the most profitable. Thought the full-blood Devon not equal to the grades of the natives. He had a few choice Devons; but found he had to cull much more to get good cows from this breed than from the natives. The same was true, in a greater degree, of the Durhams. Some of the full-blood Durhams had not milk enough to raise their calves. The cross from the Devon bull and native cow was a good one. The peculiarity of the Devons was that they would give a good quantity of milk in the early part of the season, but later it would shrink very much; if put on a new field in August, the extra feed, instead of going into the bag, would go on the ribs. In quality—dairymen would understand him—the Devons excelled all other breeds. The grade from the Devon bull and native cow was smaller than the full-blood; and the bull determined the character of the teats and external form or contour, in nine cases out of ten. The grade Devon was about as good as any breed you can get on ordinary feed. Had not made up his mind decidedly; but thought that, generally, there was nothing better than the grade Devon for dairy purposes."

Mr. Wetherell, of the BOSTON CULTIVATOR, said "there was no breed so pro-

fitable for the dairy as the native cow. A well-known farmer in Massachusetts had tried the Hereford, the Ayrshire, and the Alderney, to test the matter and determine which was the best; but there was no cow on the farm so profitable as the native. On a farm in Essex county, where the trustees of an agricultural society had introduced the Ayrshires to be tried with native cows, he (Wetherell) went up to find out which proved to be the best stock. The manager was absent, but in talking with the wife of the manager and the hands employed on the place, they told the whole truth in the matter, and they all affirmed that the common cow was more profitable than the Ayrshire. Another farmer had offered to put six or three native cows against a like number of imported Ayrshires, and let both breeds fare alike, and the owner of the animals that produced the best results at the end of one or three years should have both lots. The owner of the Ayrshires did not dare to accept the offer, for farmer Sheldon, of Wilmington, with his natives, would have taken the blooded stock."

These opinions, so strongly in favor of native cows, will arrest the attention of all, and it is a subject of regret that among so many dairymen so few expressed their views on a subject so interesting. Nor do we see any reference to the "signs" of M. Guenon, the best, in our judgment, by which to determine the milking properties of the cow. The practical experiences and observation of dairymen, thus associated together, will have great weight, and in their next meeting we hope to see a fuller discussion of the best breeds for milkers, and their peculiar properties stated more in detail.

WHAT IS THE BEST FOOD FOR DAIRY COWS?

This question was not discussed fully; the references to it were rather incidental. But few topics connected with the dairy could be made more interesting than an examination of the qualities of the different grasses, green and dried as food for dairy cows, and the changes exercised on these qualities by soil, location, climate and season, and methods of curing the grasses. So large a body of intelligent and practical men could throw much light on these topics, and we hope to see these and all other matters pertaining to the objects of the annual meetings thoroughly investigated. For this purpose it would be well to divide the association into sections, each one of which should have its particular subject assigned to it, and in the following meeting have reports on all these, and general discussions. These remarks are made, not in the spirit of fault-finding, for we are too much pleased with the report before us to entertain any other feeling than that of approbation where so much has been accomplished in the right direction in so short a time.

Mr. Wetherell, of Massachusetts, said: "The June grass is thought by some to equal the blue grass of Kentucky; this and white clover are made to produce wonderfully by the use of plaster, yielding better feed than the aftermath in meadows. The winter keep of stock is good *English* hay (hay of the *cultivated* grasses, we suppose, is meant) from uplands and corn fodder, shorts and meal; the latter not much used when not produced on the farm."

Mr. Bartlett, of Ohio, said "the farmers of the west have large fields of corn, and lately had adopted a plan of feeding cows in winter with corn in the shock. Cows were strong and healthy, and would give from one-quarter to

one-third more milk during the following season than when kept on hay. He thought better results are obtained by feeding high in winter than in summer."

"*Mr. Comstock* differed from the gentleman. He gave the system of Mr. Childs, of Oneida county, which agreed with his own views on this subject. Mr. Childs has fifty cows, and has them 'come in' about the first of April, and milks them till the first of January. In the fall, feeds corn-stalks, and feeds high up to the 1st of January, when he dries the cows by cutting off the feed; gives them nothing but oat straw and a little meal for two months, then feeds hay and increases the meal, so that the cows are in a healthy, thriving condition, but not fleshy. If a cow is thin on the 1st of March, he can bring her up in a month."

In the article on the grasses we pointed out the difference between timothy hay and corn fodder—the one is heating and binding, the other cooling and loosening. The one dries the secretions; the other increases them. Hence the superiority of corn fodder for milch cows. As to heavy winter feeding, that depends much on the shelter and use made of the cows. If they are not milked, or giving but little, the food may be less than if otherwise. A too high condition at the time of calving may result sometimes in puerpural fever, but, as a general rule, good winter keeping is the best guarantee of profit in the summer following, whether the animal is to be milked, or fattened, or grown. For summer feeding, when pastures are dried up, corn sown broadcast will be most excellent.

In his address Mr. Willard thus refers to weeds in pastures: "I may remark, however, that Mr. Farrington, for many years a cheese dealer in Herkimer county, and a noted expert in the cheese trade, has affirmed that he could detect the daisy taint in cheese, and was able to tell (with the 'tryer' at the store-house) when the cheese had been produced on farms overrun with this weed. Leeks, cabbages, and turnips give a taint to milk and butter, and it must be evident that this influence of food extends also to cheese."

But the feeding of the "*whey*" to the dairy cows gave rise to most of the discussion on food.

Mr. Willard, in the meeting at Watertown, said: "When we take into account that dairying has been carried on in some of the older districts for more than sixty years, it is a matter of some surprise that so little is known in regard to whey, its real value, and the best use to which it may be applied. So far, we have neither seen nor heard of any exact figures showing the result of feeding whey, and no writer on the dairy has discussed the subject in a practical way, so as to be of benefit to the public.

"When fed to cows it increases the flow of milk, but does not improve its quality in the same proportion. Its action when fed to milch cows seems to produce no better results, and somewhat similar to that of distiller's slops, which increases the quantity of milk largely, but yields it poor in quality. The milk of cows fed with whey is more acid, as I have repeatedly demonstrated by the use of the test paper. Cows fed on whey require less food, and when pasturage is short and insufficient, it is of most value. Where there is not a 'flush of feed,' I am satisfied that more cheese can be made from cows fed on whey than with the same pasturage and treatment without it; but I am not prepared to give the percentage from a given amount of whey.

From a careful analysis of five samples of whey, resulting from a careful manufacture of cheese, we have in 100 parts the following:

Water	93.12
Butter	.35
Casein	.47
Albumen	.38
Milk sugar	4.54
Lactic acid	.45
Ash	.69
	100.00

"*Mr. Bartlett* remarked that he had some experience in feeding whey; had fed four summers in succession, when he began to notice a singular fact. Cows that were comparatively young began to have their teeth fail. On conversing with medical men, he found that all acids are injurious to the teeth, and that persons who were accustomed to use acids suffered from an early decay of the teeth. He learned also that cows that were fed on distiller's slops were troubled in the same way. To cite an instance, one of his cows, a very valuable animal, had to be sold at the age of eleven years on account of her teeth giving out, when, if she had not been fed on whey, there would have been no difficulty in keeping her up to the age of sixteen or eighteen years; thought feeding of whey to cows a losing operation."

The ill effects of feeding whey, here referred to, arose, in all probability, from inducing a constant acid condition of the stomach, which is more injurious to teeth than the mere contact of the acid while drinking. These effects would be greater or less in proportion as the whey was fed acid or sweet, and to cows or calves; for the latter having a greater proportion of gastric juice, the acid would be more neutralized by it. Hence the following favorable results from the use of whey:

"*Mr. Comstock* remarked that he has raised from ten to fifteen calves per year; always raised them on sweet whey; mixed meal with the whey. When fed on nothing but whey, calves did not thrive as they should. The calves run at pasture while feeding; fed three times per day."

"*Mr. Stevens*, of Lewis, had raised calves on whey; had a long trough for holding the whey, where twenty-three calves could at all times have access; fed whey sweet, and let them have all they could drink."

"*Mr. Hamlin*, of Rutland, had been in the habit of feeding whey to cows; had fed it in this way for eighteen years. Feeds it to sixty cows, and thinks there is nutriment in it either for cows or hogs. Hogs fattened on it, and were sold to the butchers at high rates. Is in favor of feeding it to cows, and in his experience has never seen any bad results from such feeding. Feeds shorts, but never during 'flush of feed.' When cows drop off, feed grain; thinks that by using whey, pastures hold out longer, and that a pasture which would, without use of whey, keep fifty cows, could keep sixty with the whey. Was careful not to let cows drink too much whey, as they would drink enough to kill them. Feeding whey increases the flesh, if not the milk, and there was a gain, because they could be turned off to better advantage. About four pails of whey per cow are used daily."

"*Mr. Canfield*, of Champion, never fed whey alone; feeds rye and oats, in proportion of one bushel of rye to four bushels of oats. When I commence

feeding whey I use from two to four quarts of the grain. Do not feed cows much whey in June; I then mix it with shorts, and feed it to young stock."

THE MANUFACTURE OF CHEESE.

The two preceding questions relate to the production and quality of the milk. The following refer to its manufacture into cheese:

HOW A FACTORY IS STARTED.

"When it is proposed to start a factory several persons who are neighbors to each other get together and talk over the matter among themselves. If enough are found willing to turn in their dairies together, so as to make a fair start, (say 300 cows.) a committee is appointed to look further into the matter, to visit factories, and get all the information on the subject that can be had. A favorable report from the committee being had, they then organize, choose directors, and adopt some general rules or plan for the guidance of the association. The next step will be the selection of some experienced cheese-maker as superintendent and the place for the erection of the factory building."

THE CHIEF REQUISITES FOR A FACTORY SITE.

"In choosing the place for the erection of the factory buildings," says the report for 1864, "two requisites are sought—good water and convenience as to access and distance for the dairies furnishing the milk. The site, above all, should command an abundance of pure spring water. This is regarded by those who have had longest experience at the business as imperative.

"Even in family cheese-making a considerable quantity of water is needed in various ways about the dairy—for cooling milk, cooking the curd, and keeping the utensils and buildings clean and sweet; but for the factory the quantity of water should be abundant and unfailing. It is usual to have a considerable stream of water passing under the manufacturing room, so as to carry off the drippings of whey and refuse slop, so that there be no accumulation of filth or taint of acidity hanging about the premises. Where whey and slop are allowed to collect from day to day about the milk-room the stench at times becomes intolerable, and must do great damage to the milk, which absorbs taints of every character with great readiness. Hence means must be taken to have all the refuse matter swept beyond the reach of the premises."

Mr. Willard thus insists on the necessity of perfect cleanliness: "The old factories need remodelling. The new factories should be constructed with particular reference to cleanliness, the avoidance of all taints about the buildings likely to be absorbed by the milk or cheese, and, finally, an arrangement of the dry-house so that some uniformity of temperature be preserved while the cheese is undergoing the process of curing. There are a large number of factories where no attention is paid to these conditions. Whatever wonderful skill is exercised in the management of the milk, and in its manufacture into cheese, how is it possible to obtain sweet, clean, and high flavor from milk reeking in emanations from the pig-stye, the stench of putrid whey, or the odors arising from decomposing slops?"

THE DRY-HOUSE.

Mr. Willard thus refers to thorough ventilation in the dry-house: "But a radical change should be introduced in the dry-house. Its location in a pure atmosphere, with thorough ventilation to carry off noxious emanations that are arising from the cheese during its process of curing, are not the only improvements demanded. *Temperature* should be under control so that fermentation may be carried on with *uniformity*. It has been claimed that the superiority

of English cheese is due in a great measure to the even temperature of the climate; and yet, with all this advantage of climate, the Cheddar dairymen pay more attention to the ripening process of their cheese than is done at the American factories. The use of the thermometer is as necessary in the dry-house as in the milk-room. Large quantities of well-made cheese are badly spoiled in curing. When the weather is just right the curing process goes on without much trouble; but when it is variable, with extremes of heat and cold, damp and dry weather following in rapid succession, the cheese is more or less out of flavor, and no after treatment will be able to correct the difficulty. The dry-house should not only be arranged with ventilators at the ceiling and wickets at the floors, giving free communication with the air outside, but it should be so constructed that a low, even temperature be preserved in hot as well as cold weather. The temperature best adapted to curing cheese in order to secure fine flavor is from 65 to 75 degrees."

THE RESULTS OF THE FACTORY SYSTEM.

When a factory is established, the milk is brought to it at such times each day as is agreed upon. Each person's milk is weighed, and credit given to him for the amount. He receives an amount of cheese in proportion to that of the quantity and quality of the milk, and charged a stated price, usually about one cent per pound, for its manufacture. Herein is seen the first benefit of the association. The *quality* of the milk is a subject of close observation and discussion, and all matters affecting its quality and condition, and their relation to cheese-making, assume a practical bearing. The breed of cows, their food, other causes, such as overheating the cows by too far or too rapid driving, weeds in the pastures, &c., all are topics of investigation. It is easy to see that there is a *levelling upwards to the standard of the best milk.* Herein the manufacturer acts on the dairymen. They, in turn, act on the manufacturer by comparing his manufactured cheese with the best kinds made in the best markets. Thus comparisons are instituted and investigation promoted. It is needless to say that the result is *progress.*

Very properly, then, does the association make comparison of their cheese with the best of other countries. In his address Mr. Willard discusses—

THE COMPARATIVE QUALITIES OF AMERICAN AND ENGLISH CHEESE.

"American cheese," he says, "has been greatly improved within the last half-dozen years, but the average of our factory cheese is still below the English standard of first-class Cheddar. This cheese sells in advance of ours. It has been sold in the London market from 17 to 24 cents per pound in gold, while choice American cheese commanded a little more than half that price. Why is this?

"According to the analysis of American cheese, made by Dr. Voelcker for the Royal Agricultural Society, it appears that our cheese is not wanting in richness, having nearly 36 per cent. of butter, and more that material with less water than the English Cheddar; but the great fault complained of was deficiency of flavor, and also want of solidity.

"With regard to the importance of attending to the condition which insures fineness of flavor, when making cheese for the English market, the following extract, written by a noted London dealer to a friend in Ayrshire, is worthy of a place in this connexion. He says:

"'I am engaged in selling large quantities of Cheddar cheese from Scotland, and you will do a benefit to the producers if you urge upon them to attend to the condition of the evening's milk in the morning, and also to attend particularly to the ripening process. These two matters affect flavor, and *flavor* is everything if a high price is aimed at. I sold in London, yesterday, the produce of two dairies equally rich, yet the one was $5 50 per hundred weight higher than the other.'

"Now, there is no reason why our factories should not be able to meet all the conditions of the English market as to flavor and high-priced cheese. They have greatly improved the character of American cheese, and by united and persistent effort this point *can and must be reached.* I learn from dealers that the point has been nearly or quite reached by some of our factories the past season; and if the statement be correct, we can see our way more clearly in the future, for we can manufacture and sell our cheese in England for what it costs there in the mere production of milk."

HOW THE CHEDDAR CHEESE IS MADE.

Having properly regarded this cheese as the standard of excellence to which our own should advance its qualities, Mr. Willard proceeds to state how the Cheddar is made. He says:

"In the improved Cheddar process, adopted by Mr. Harding, of England, great attention is paid to the milk-house. It is constructed with reference to regulating temperature by admission or exclusion of air, and exposing the milk to a fresh and untainted atmosphere. The evening's milk is cooled to 60 or 62 degrees, and the highest temperature at which it should stand in the morning is 64 degrees. When the temperature is high in the evening, the milk is set thin in coolers and exposed to a free admission of air. The first act in the morning is to test the temperature of the evening's milk. If the temperature is above 62 degrees, the milk is allowed to remain in the plates or coolers until the morning's milk is put in the cheese tub. But if the evening's milk is at or under 62 degrees, it is lifted and sieved through a fine cloth into the cheese tub, and the morning's milk added to it. When the temperature of the evening's milk is high in the morning, it is an indication that it is on its way towards acidity.

"The testing of the cold milk by the thermometer serves as a guide for the quantity of rennet needed for coagulation, as less is necessary when the evening's milk stands at a high temperature in the morning. In the Cheddar process of manufacture it is *preferred* that the milk be kept at a low temperature, and the acid (which is sour whey distinctly acid) to be applied directly to the milk at the time of adding the rennet.

"Its use is to assist the rennet in the more complete conversion of the sugar of milk into lactic acid. When this is effected to a proper degree, and no more, the acid passes away in the whey during pressing and in the cheese-room, leaving the curd in a condition that will not only make the cheese produced more solid and close in texture, but richer, firmer, sweeter, and of greater specific gravity than when the acid has not been present in a sufficient quantity. When the temperature of the cold milk is 64 degrees, no sour whey is used, the acid being present in a sufficient degree without it. In large dairies less sour whey is needed in proportion to the milk than in small ones.

"The milk is set at 78 degrees, and if the temperature of the evening's milk has been kept at about 60 degrees, five quarts of sour whey, distinctly acid, is added to 165 gallons of milk, at the time of putting in the rennet, and coagulation is effected in from forty-five to sixty minutes. It is preferred that coagu-

lation be perfected in so short a time, as there will be waste of richness if it is protracted.

"After the milk has stood fifteen minutes, the top or surface is gently stirred up with the fingers to prevent the cream from ascending, and this is to be repeated if the curd is longer in beginning to form. As soon as it is sufficiently formed, (and it is not allowed to get very firm,) the operation of breaking is at once commenced, and is performed *carefully, gently, and minutely.* This is accomplished in about thirty minutes. Before the breaking is finished, the mass is raised, by the addition of heated whey, to 80 degrees. This additional heat not only keeps up the temperature, but hastens the separation of the whey from the curd, and assists in promoting the necessary acidity. The curd is now allowed to stand forty-five minutes, if the acid is not present in too great quantity, but when too much is present it is allowed to stand no longer than the time occupied in heating. When the curd has stood the proper time, the whey is drawn till the surface of the curd appears, when the curd is carefully broken up and the temperature of the mass gradually raised to 100 degrees by the addition of heated whey. The length of time that stirring is continued is varied, according to the state of the curd, from fifteen to twenty minutes when rather acid, and from twenty-five to thirty minutes when rather sweet. When the curd is sufficiently firm it is in small particles like peas, firm, elastic to the touch; and when a portion is taken up and squeezed in the hand, it does not readily adhere together, but separates in particles. The stirring is continued until the curd has the proper feel, without regard to the time occupied, and should then be given up, the temperature being 100 degrees, for if continued longer the cheese will be hard and stiff. This process of saturating the curd with the heated whey has the effect of completely separating the whey from it; the moisture which adheres to the particles, and which will come out under pressure, is all that is left. The curd when separated from the whey, in the manner described above, retaining all its natural richness, and the cheese produced has the sweet, nutty flavor, something like new milk, known as the *Cheddar flavor.*

"When the curd is only brought up to or a little over the natural heat of the milk, all the butter is retained and fixed in the curd; for although subjected, even at first, to a pressure of half a ton, no trace of butter appears.

"After the curd has been allowed to remain *undisturbed* in the scald about thirty minutes, the separator is again inserted, and the whey run off.

"The curd is then thrown into a heap in the centre of the cheese board, or on the side of the tub if it is flat-bottomed; it is then covered over with a cloth, and allowed to lie thirty minutes, the whey meanwhile flowing slowly from the heap. At the end of this time it is cut across in large lumps, heaped up, and covered as before, and allowed to lie other thirty minutes, when it is taken out of the cheese tub, laid upon a cooler, split by the hands into thin flakes, and spread out to cool. The curd at this stage has a distinct acid smell; its taste is slightly sour, and by no means palatable, and such as would lead a novice to think it unlikely to produce a fine cheese.

"When the curd is placed on the cooler (which is placed in the coolest part of the dairy) for ten minutes, it is turned over and allowed to lie the same length of time. It is afterwards put into a vat, having a clean cloth inside, and put to press under a weight of half a ton. After having been subjected to this process for about ten minutes, it is taken out, ground in the mill, accurately weighed, and returned to the cooler, where it is salted at the rate of one pound of salt to fifty-six of curd, and cooled down as near to sixty degrees as the temperature of the air will admit. In summer it will not easily be reduced below sixty-five degrees; but no hurt will accrue from its being put into the vat at that temperature.

"The curd is then finally put into the hoop and under pressure of six hun-

dred pounds. In the evening it is taken out of press and a clean cloth put on it, the cheese being turned and put back to press under a pressure of half a ton. Next morning it is again taken out and gets a dry cloth, is turned and put to press, with four hundred pounds additional pressure. On the following day it receives its third and last cloth, and is placed under an additional pressure of four hundred pounds. In the evening it is again taken from the press, gets a calico cap neatly stiched on it, and put under a pressure of one ton, until the following morning, when it is finally taken from the press, having remained under pressure for seventy-two hours."

These directions are fully and clearly stated. We have preferred to make these extracts, rather than present our own opinions in another form, because it is due to such practical men, and whose special occupation is cheese-making, that they should speak for themselves.

STATISTICAL TABLES RELATING TO CHEESE-MAKING.

The report contains the statements of the operations of many of the dairies, and the following condensed table is made up from these statements :

Table giving the average number of cows, amount of cured cheese, average price, and average pounds of milk to one of the cured cheese, for the several factories from which full reports have been received.

Name of factory, location, and county.	Average number of cows.	Amount of cured cheese made in pounds.	Aver. price per lb. in cents and fractions.	Average lbs. milk for one of cured cheese.
McLean Factory, Tompkins	937	302,084	.....	9.60
Adams Cheese Factory, Adams, Jefferson	700	142,518	23.09	9.95
Blodgett Mills Factory, Cortlandville, Cortland	290	71,800	21.00	10.12
Gilbert Mills Factory, Oswego	350	110,455	18.96	10.10
Oneida Cheese Factory, Oneida, Madison	.....	119,346	13.32	9.87
Hart Factory, Oneida Lake, Madison	270	55,422	21.42	10.30
Oneida Cheese Factory, Oneida, Madison	.....	174,848	21.05	9.94
Roberts's Factory, Floyd, Oneida	200	.....	22.17	.....
Woodworth's Factory, Yorkshire, Cattaraugus	420	124,284	23.00	9.51
Higginsville Factory, Higginsville, Oneida	245	65,776	21.81	9.75
Pecksport Factory, Eaton, Madison	850	284,543	20.50	9.91
Frankfort Factory, Frankfort, Herkimer	475	191,702	21.23	9.42
Herkimer County Union Factory, Little Falls, Herkimer	460	151,980	22.43	9.88
Mannsville Factory, Mannsville, Jefferson	600	162,000	23.06	10.01
Parker's Factory, Wardwell, Jefferson	300	72,010	21.50	9.85
Centre Brook Factory, Otego, Otsego	.....	21,945	25.00	9.23
C. H. Curtiss's Factory, Waterville, Oneida	250	61,140	22.54	10.18
Decatur Factory, Decatur, Otsego	600	207,634	.....	9.50
Wallkill Creamery Association, Middletown, Orange	400	73,100	.....	.....
Philadelphia Factory, Barber's Corners, Jefferson	.....	90,401	21.68	10.26
Weeks's Factory, Verona, Oneida	530	173,691	21.31	9.59
Daniels's Factory, McDonough, Chenango	500	149,131	19.50	9.75
Holmesville Factory, Holmesville, Chenango	400	114,246	20.62	9.90
Miller's Factory, Constableville, Lewis	580	182,111	22.77	9.54
Collins Factory, Collins, Erie	851	249,608	20.73	9.85
Hawleyton Factory, Hawleyton, Broome	265	68,660	21.80	.....
Coal Creek Factory, Coal Creek, Herkimer	475	176,000	18.80	10.00
Stevens's Factory, Lowville, Lewis	750	207,121	21.60	10.16

Table giving the average number of cows, &c.—Continued.

Name of factory, location, and county.	Average number of cows.	Amount of cured cheese made in pounds.	Aver. price per lb. in cents and fractions.	Av'rage lbs. milk for one of cured cheese.
Charleston Factory, Charleston, Montgomery	335	98,101	22.25	9.84
Nelson Factory, Nelson, Madison	575	199,884	19.69	9.78
West Schuyler Factory, West Schuyler, Herkimer	550	196,916	21.90	9.71
Springfield Centre Factory, Spr'gfield Centre, Otsego	300	137,866	21.29	9.97
Mile Strip Factory, Fenner, Madison	360	122,105	21.14	9.85
West Exeter Factory, West Exeter, Otsego	500	172,894	21.75	10.07
Brookfield Factory, Brookfield, Madison	200	64,999	24.25	8.31
Orwell Factory, Orwell, Oswego	250	72,557	21.70	10.00
North Litchfield Factory, North Litchfield, Herkimer	375	127,275	21.70	9.90
Deansville Factory, Deansville, Oneida	275	83,094	21.33	10.38
Deerfield and Marcy Factory, Marcy, Oneida	1,032	295,115	20.07	10.26
Stanley's Factory, Adams, Jefferson	400	134,050	18.80	9.90
Scriba Factory, Scriba, Oswego	400	100,744	20.00	9.35
East Berkshire Factory, Franklin, Vermont	500	101,539	24.00	10.00
Ingraham & Hustis's Factory, Adams, Jefferson	600	142,518	23.09	9.95
Whitestown Factory, Whitestown, Oneida	600	204,025	22.70	10.05
Turin Factory, Turin, Lewis	730	206,333	19.68	9.58
Sears's Factory, Cuyler, Cortland	770	206,897	.....	9.93
Loraine Factory, Loraine, Jefferson	400	106,000	21.25	9.72
Brown's Factory, Columbus, Chenango	375	114,429	22.00	9.64
Canton Factory, Canton, St. Lawrence	.....	68,032	.....	9.76
E. N. Carrier's Factory	400	126,625	.....	9.59
Westcott's Factory, Watertown, Jefferson	318	91,639	23.37	9.52

To the above we add the following, in order to show the cost of making cheese by the factory system, and the general profit of this branch of the dairy business, in 1864:

HART FACTORY, ONEIDA LAKE, MADISON COUNTY.

Date of sale.	Pounds of milk.	Pounds of cheese cured.	Gross receipts.	EXPENSE ACCOUNT.		Net receipts divided.
				Making.	All other outgoes.	
1864.						
July 8th	80,362	8,070	$1,614 00	$121 05	$44 15	$1,448 80
August 9th	152,567	13,600	3,264 00	204 00	83 69	2,976 31
August 9th	3,026	327	78 48	4 90	1 58	72 00
October 20th	224,806	20,779	4,259 69	312 06	115 25	3,832 38
November 21st	110,273	12,646	2,655 66	189 69	68 59	2,397 38
Total	571,014	55,422	11,871 83	831 70	313 26	10,726 87

The cheese-making season at the above factory commenced May 25, and ended November 19. Greatest number of cows, 270; 1 pound of cured cheese from 10.30 pounds of milk. Average price for which cheese was sold, $21 42; cost of making, 1½ cent per pound; all other expenses, including bandage, anotta, salt, boxes, team, labor, &c., &c., a little over ½ cent per pound; net receipt per pound, 19⅓ cents.

ONEIDA FACTORY.

Cured cheese made 174,848 pounds; milk, 1,739,602 pounds; 9.94 pounds of milk to 1 of cheese. Average price received, $21 05 per pound. Gross *receipts*, $36,748 44. *Expenses* as follows: for making, $1,748 44; for boxes, $448 68; bandages, $192 99; for rennets, $355 81; for salt, $122 36; for anotta, $26 78; for sundries, $46—total expense, $2,961 06, or 66 cents per 100 pounds. *Net* receipts, $33,860 15.

GEORGETOWN FACTORY, MADISON COUNTY, N. Y.

Sales in 1863.

Average number of cows, 435; pounds of milk, 1,538,204; cheese, 156,911; pounds of milk to one of cheese, 9¾; average amount of cheese to each cow, 361 pounds; sales at 12½ cents per pound. Gross receipts, $19,614; expenses, $635. Net receipts, $18,979.

RESOLUTIONS ADOPTED BY THE ASSOCIATION.

On the last day of their meeting, in January last, the association adopted the following resolutions, expressing their views upon the various questions discussed before it:

Resolved, That the principal points to be observed in constructing a cheese factory for economy and convenience are: access to a plentiful supply of cold water, perfect and speedy passing off of all refuse slops from the buildings, that the air may not be impregnated with bad odors; to secure the greatest amount of room with the least amount of roofing and other building material.

Resolved, That the maximum distance of carrying milk to a factory depends upon the ability and pecuniary interest of the patron, as three to six miles not being an impediment to the manufacturer.

Resolved, That the shape and weight of cheese, to meet the present market, should be at least half as thick as wide, and not to exceed one hundred pounds in weight.

Resolved, That the true interest of the patron, as well as the manufacturer, demands that due attention should be given to delivering milk sweet and free from all impurities that induce putrescent qualities.

Resolved, That heat being the primary agent in bringing liquefied atoms into solids at a proper temperature, also a powerful exerting agent in liquefying solids at a high temperature, strict attention should be given to a mild, uniform heat in all its uses in making and curing cheese.

Resolved, That a minute division of the curd, after coagulation, is essential in the process of cheese-making.

Resolved, That a gang of thin, highly polished steel blades is the best tool for subdividing curd in the tub.

Resolved, That the proper time to divide or cut the curd after coagulation is an important point to be determined, to avoid waste of quantity, and materially affecting the quality of the cheese, and the best test of its readiness for separating the fluid portions is its appearance of being brought to a proper solid or organic unity.

Resolved, That it is expedient to color curd to meet the best demand.

Resolved, That Jones's extract of anotta is the best coloring now in use for cheese.

Resolved, That a minute subdivision of curd is essential in the process of working curd.

Resolved, That no other property can be substituted for the cow's stomach to insure success.

Resolved, That a solid texture of cheese is improved by pressure longer than twenty-four hours.

Resolved, That a curing room should be constructed, to avoid all external influences at pleasure, with ample ventilation.

Resolved, That a temperature in a curing room exceeding seventy degrees is detrimental to cheese in the curing process.

Resolved, That the proper treatment, to improve the milking qualities of our dairy stock, is a judicious cross of our best milkers with other good milking families of good thrift and physical constitution, with the habit of good keep and excessive milking.

Resolved, That permanent and reliable milking qualities are not to be found in any special breed, but in particular families of different breeds.

DIVIDED AND ORGANIZED LABOR.

That a division of labor is as essential to success in agriculture as it has been in manufactures is a truth slowly developing itself. That farming, which attempts to do many things, does none well, because the limited amount it can accomplish in many things, will not justify that expense of preparation essential to do each properly. In the west cattle and hog packing is a business distinct from the raising and fattening the animals, and wherever a division of the manufacture of the material from its production can be made, it should be done. Thus, in raising flax, the manufacturer should take the straw from the field; and cheese-making, as we see, has been benefited by its separation from the production of the milk.

Such division of labor will result in an associated labor, and the two united will cause such a scrutiny in all details of operations that the best and most economical modes of manufacture will soon be adopted.

The report before us exhibits the progress of the associated cheese manufacturers. Our extracts from it have been limited, and the report itself should be in the hands of every cheese-maker. How far the association can supply individuals we do not know, but this can be ascertained by addressing the president, George Williams, of Oneida county, or the secretary, W. H. Comstock, of Utica, New York.

THE PACIFIC STATES AND TERRITORIES.

CALIFORNIA.

The late President relied much on the wealth of the mines of these States and Territories to aid in meeting the obligations of the government imposed on it by the war. To develop this wealth by every encouragement that government could give would have had his warm approval. And so far as agriculture can aid such development this department is anxious to do for it whatever will subserve to its progress, and is within the powers of the Commissioner.

But, at this time, it seems impossible to have access to much of the mining countries. But few of the reports forwarded to our correspondents reach them, and the mail service does not seem competent to establish such a connexion with them as is necessary to place California among the States whose crops are regularly reported.

We have before us the last report of the State Board of Agriculture of California, and the following paragraph from it shows that local causes have rendered ineffectual the efforts of the State to take a reliable census of its own agriculture:

"The importance of reliable agricultural and other statistics to the successful and intelligent conduct of a government, and to the advantageous direction and development of the resources of a State are too obvious to require an argument, and particularly so in a new State, with resources so diversified as ours; and yet we regret to record the fact that we have not now, as a State, and never had, any system by which such statistics have been or can be collected. In older and more thickly-settled communities, with their superior facilities for communication, it has been found practical to collect such statistics through voluntary agents, who, without compensation except the consciousness of serving their country, devote their time and energies to the subject, and, under a system of reports to one common head, produce a result sufficiently correct for all practical purposes. But in a State where the facilities for travel, except on general routes to a few important localities, are so limited and expensive as ours, and where so few of our farmers have become so permanently fixed and devoted to their occupation as to inspire that interest in the cause necessary for such an undertaking, and so few are able to afford the time and means for its faithful execution, such a system will be found, as it has already been found by the last two years' efforts of this board, almost totally inoperative. The present system of reports by the county and district assessors to the surveyor general has proved to be equally unreliable and uncertain, only from one-half to two-thirds of the counties in the State being reported at all, and these reports, in many instances, being mere rough estimates instead of actual and careful counts. Statistics thus partial and unreliable, in the opinion of the board, tend rather to depreciate the value and magnitude of our industrial resources, and to injure and prejudice the importance and standing of our State, both among our own people and abroad, than otherwise."

With such difficulties in the way we always reluctantly turn to our Pacific States and Territories, although in our earnest wish to benefit their industry they are even before our nearer and older States. We can, from all sources, but glean enough to give a general record of their agricultural condition.

The season, the climate, and its relation to agricultural improvement.—In December the rains fell generally and heavily until about the first of February, when the weather cleared, and during the last-named month was unusually cold. "On the 18th of February," writes our excellent correspondent, Joseph C. Wallis, of Santa Clara county, "we experienced a severe storm of rain, with a heavy fall of hail at intervals throughout the day. At one time the ground was covered with hailstones the size of a large pea. During the day the wind blew a gale from the north and northwest. The following morning the coast range and the dividing range of mountains presented a beautiful and unusual appearance, being covered with snow from their summits to their base."

But the weather subsequently became dry, so that late sown crops were injured, but early sown were doing well. This is the general experience everywhere, and hence very properly does the State Board of Agriculture thus urge the necessity of such a system of ploughing as will best secure early sowing in a properly prepared soil.

"It is proved by statistics, collected by our secretary the past year from reliable sources, that most of the grain land in California will, *when summer-fallowed*, produce eight-tenths more grain per acre than when ploughed and sown after the rainy season sets in. Yet not one-twentieth of the land devoted to grain-raising for years past has been summer-fallowed."

The report shows that the drought of the winter of 1863–'64 has not been all evil, for, like most all other evils, it has called forth energies to guard against the effects of its recurrence. It has awakened an interest in the subject of irrigation. "The experience of those who have practiced it for a number of years past," says the report, "proves that most any of our lands situated back from the river bottoms proper, and which have heretofore been considered capable of producing only small grains, and those only in favorable seasons, may, by the judicious use of water, be made to produce in abundance, and with almost absolute certainty, most any crop of any climate or country. *This experience has also established another important fact, that the best and only time necessary to use this water is during the winter season* when all our creeks and rivers are full, and capable of supplying almost any quantity desired. A thorough saturation of the soil at this time serves to mature any crop, or two or three different kinds of crops in a season, *without further irrigation*."

To show the present extent of irrigation, and what it will be in this State, we add the following paragraphs:

"By means of a ditch and reservoir eleven miles in length, tapping the San Gabriel river, in Los Angeles county, forty thousand acres of land, which hitherto has been used only for grazing purposes, is now being irrigated and converted into one of the most fertile portions of that county, already so justly celebrated for the variety and excellence of its productions.

"In Yolo county there are five main ditches, tapping Cache creek in as many different places, with an aggregate length of twenty five miles, besides a great number of branches, all capable of irrigating at least one hundred thousand acres of as good land as the State contains.

"The people of Colusa county are also moving in this matter. They propose to take the water from the Sacramento river, at any point above low-water mark, so as not to interfere with navigation, and turn it through a canal which, including one main branch, will be one hundred and twenty miles in length, over an area of some three hundred thousand acres of black valley land in that and the northern part of Yolo county. The scheme is pronounced entirely practical by competent engineers who have made the preliminary surveys, and the people are determined to accomplish the enterprise and reap its benefits."

Some of our correspondents in the mining territories have expressed their opinions as to the necessity of relying on irrigation, and there is little doubt but it will be the leading feature of our agriculture in the dry summer climates of the trade-wind region. In Nevada, in places where nothing but sage brush had grown before irrigation, both vegetables and cereals grew "beyond expectation" when irrigated, and all such lands, before regarded as worthless, were rapidly occupied.

Our correspondents again refer to the destruction of farm stock in conse-

quence of the drought of winter before last, followed up by the overflow of the river bottoms in December from the unusually heavy rains of that month. The report of the State Board of Agriculture also refers to it, and says:

"The annual record of death by starvation of a large percentage of the stock of our State has become almost as much a matter of course as the periodical return of our rainy seasons. During the unusually dry season of the past summer great numbers of stock were driven to the mountains of the Sierra Nevada and Coast Range, where they found an abundance of food to carry them safely through the dry season, but to return to the valley ranges, to enrich the soil with their decaying carcases. Many others were driven to the low land surrounding the confluence of our large rivers, where sufficient feed for the subsistence of nearly half of the stock in the State, during the summer seasons, has for years past been allowed to go to waste annually; but when forced from these luxuriant fields by the sudden rise of the water, the same destructive fate awaited them as did those from the mountains."

The remedy proposed against these losses is that suggested at different times in these reports. The large tracts must be sold into small subdivisions, so that more thorough farming must provide winter food, instead of the present dependence on uncultivated districts.

"The owners," says the report, "of large herds and flocks will be compelled to reduce them to such a number as they can provide winter food for; and the farmers who have heretofore turned their attention almost exclusively to grain-raising will find it much more profitable to raise a greater variety of crops"—and become, we may add, stock-raisers as well as wheat-growers, relying much as is done in the west, upon the wheat straw as winter food for the stock

The present crops.—From the latest San Francisco papers, average crops are anticipated, and wheat then selling from 3½ to 4½ cents per pound, it was supposed would not bring more than 1½ to 3 cents as soon as the new crop was in market. Frosts in some of the counties had been severe in the beginning of April; but rains had fallen about the middle of May, which, while injuring to some extent the hay crop, had much benefited the wheat and other cereals. Altogether there was a favorable prospect.

OREGON.

From this State the returns from regular correspondents are increasing in number, and we hope soon to be in communication with the leading counties. These returns present the amount of this year's crops as greater than any preceding, and their general condition as good.

WASHINGTON TERRITORY.

Our returns are few from this Territory, but they indicate a large increase in spring wheat. In some counties winter wheat was very good; in others, very indifferent. The spring had been unusually cold and backward; and at Fort Townsend, in Jefferson county, the pastures were two months behind previous years. Crops requiring warm nights, as corn, did not grow well. The chief crop in that county was potatoes, which averaged 500 bushels per acre, selling last October at 75 cents per 60 pounds, and $1 25 in May.

UTAH TERRITORY.

The winter in this, as well as in the other Territories, has been one of great severity. Unusual snows and continued severe frosts have prevailed during the winter and spring. But most of the grains sown are spring and not winter grains, and hence these crops have been retarded only; but in May a much larger quantity than usual of spring wheat and barley and of oats had been sown, averaging in different counties from one to three tenths of an increase.

Although pastures were late in all the counties, yet in many they were good in April.

Our returns indicate, as they always have done from this Territory, great attention to agriculture, and an energy and intelligence in this pursuit that is as gratifying as it is promising to the successful colonization of the entire Rocky Mountain districts.

DAKOTA AND COLORADO TERRITORIES.

What has been said of the winter in Utah will apply to these Territories. March was severely cold, and snow-storms occurred on the 7th and 12th days of April, but after these the weather was pleasant and favorable. Crops were favorable.

CONDITION OF THE CROPS.

The tables below exhibit the condition of those crops in May which are planted in the spring, also of the fruits and pastures. A general glance at these tables will show how favorable they generally are. As 10 is the standard of comparison, it will be seen that the returns exhibit fair averages. It will not be necessary to dwell on the crops separately, but it will be sufficient to comment upon them as classed above.

1. *Spring-sown crops.*—The planting of the corn crop was delayed by the wet weather in May. In the New England States there is a return of but one dry week. In New York, New Jersey, Maryland, Delaware, Kentucky, and West Virginia, there is almost an equal condition of wet weather, and in Pennsylvania it is but little different. The western and northwestern States show much less wet and more dry weeks. The dry weather of these States have been favorable to noxious insects, and local complaints have reached us of the chinch bug, potato bug, and grasshoppers; but, with these drawbacks, it is believed that the general condition of the corn is good, for the drought, by which it was suffering in the west, has given way to refreshing rains, and in the east there has been sufficient dry weather to put the growing corn in good culture. These rains have found some fields weedy in the west, and the lateness of the planting, the labor necessary to be given to the clover-hay harvest, and the early wheat harvest, will make against the proper and timely ploughing of the

corn-fields; but still, with but moderate fair weather hereafter, there is every reason to anticipate a most favorable corn crop; but much will depend on the weather of July, for should it be one of continued drought, as it so often is, the lateness of the planting would be very unfavorable.

The appearance and amounts of the other spring crops, sorghum, flax, potatoes, and beans, are even better than any one could, in reason, have anticipated, when so large a portion of farm labor was still absent in the armies. There are localities where unfavorable weather and this scarcity of labor tended to lessen the amount planted, but the general condition is as seen in the table.

2. *The fruit crops.*—These exhibit greater irregularity. East of the mountains they are better than west. The climate of the Mississippi valley is one of much greater extremes, as we have had occasion to remark so often, and therefore more unfavorable for fruits. A severe frost on the 11th of May injured the grapes in many localities, and so affected the apples that, in the wet weather that followed, many dropped off. Besides these present injurious causes, the effect of the intense cold of January 1, 1864 has not been overcome yet, for the peach trees were either killed or so much injured that another season's growth will be necessary to overcome these injuries. Ohio, Indiana, and Illinois were most injured by the cold of that day. The small fruits were in a better condition, and it is gratifying to observe the increasing interest in the cultivation of these; for although, generally, they are not a money crop, yet they add much to the health and comfort of the family.

3. *Pastures.*—These are unusually good everywhere. As a consequence, farm stock is in a good condition. Butter and cheese will be more extensively made, and the amount of clover-hay will be larger than usual. Of its quality we cannot report until August.

4. *Weather.*—The general character of the weather for farming operations of May, 1864 and 1865, compares as follows:

	Favorable.	Wet.	Cold or very wet.	Dry.	Snow or very dry.	Whole number of weeks.
May, 1864	645	467	99	484	6	1,701
May, 1865	793	598	303	362	121	2,177

The percentage of the *favorable*, *wet*, and *dry* weeks of the whole number is, May, 1864, favorable, 38 per cent.; wet, 27½ per cent.; dry, 28½ per cent. May, 1865, favorable, 36½ per cent.; wet, 28 per cent., dry 17 per cent. The principal difference in this comparison is in the dry, being much less in May, 1865, and this is owing to the entire want of dry weeks in the New England States, and the small portion of dry weather in the middle States, and Delaware, Kentucky, and West Virginia.

Owing to some cause, as yet not certain, we got no returns from Kansas. It is probable that the circulars were lost on the way, for our correspondents in that State are among the most punctual.

Table showing the amount and appearance of the spring crops on the 1st day of June, 1865.

STATES.	CORN.		SORGHUM.		FLAX.		POTATOES.		BEANS.	
	Amount planted this spring compared with last year.	Appearance of the same.	Amount planted this spring compared with last year.	Appearance of the same.	Amount sown this spring compared with last year.	Appearance of the same.	Amount planted this spring compared with last year.	Appearance of the same.	Amount planted this spring compared with last year.	Appearance of the same.
Maine	9¾	10	10	.....	10	10	10	9⅞	10	10
New Hampshire	10⅜	9⅗	.....	.....	10	10	10⅘	10⅓	9⅜	10
Vermont	10	10⅛	.....	.....	10⅕	9⅕	10	10⅛	10	10
Massachusetts	11⅛	10⅓	12	9⅛	10	9	10⅙	10½	10 6/11	10
Rhode Island	9⅔	10⅓	.....	.....	.....	.....	10	10⅔	10	10⅓
Connecticut	10¾	10	11	9	10	10	10½	9¾	9⅛	10
New York	11	10¼	10⅗	10	9⅛	10½	10½	10⅜	9½	10¼
New Jersey	10⅛	10	10⅗	10 3/7	8⅗	10	10½	10½	10	10⅜
Pennsylvania	10⅕	10⅘	11	9 7/10	9	10	10⅛	10⅗	9⅜	10
Maryland	10¼	10	9⅜	9 5/9	8⅗	10	10¾	10⅛	10	10⅕
Delaware	10	9	11	9	11	10	10	10	10	10
Kentucky	8⅔	9	9½	9	10 3/11	10	10⅙	10	10	8⅝
Ohio	10	9⅜	10	9⅛	9½	10	10½	10	9⅝	9
Michigan	10¾	10⅕	11⅞	10	10⅝	10	10 6/11	10¼	9	10¼
Indiana	10	10	10⅛	10⅐	10	10⅛	10⅛	11	10	10⅙
Illinois	10⅛	9¼	10⅛	9½	9½	10	10 3/7	10¼	9	10
Missouri	10⅞	10	11	10	10	10	10⅕	10⅙	9½	10
Wisconsin	11	13⅜	12	10	11⅛	9⅛	10½	10¼	9	9⅜
Iowa	11⅗	10	11½	10	10	9⅜	10⅛	9½	10	10⅕
Minnesota	13½	10⅓	13⅝	10	12⅚	10	11⅛	10⅓	10½	10
Kansas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
West Virginia	11 4/7	10½	10 3/7	10	11	10½	10½	11	10	10⅓
Nebraska Territory	15¼	11 1/7	12⅝	10 1/7	9	6	11⅝	10⅔	11	10

Table showing the amount and appearance of the fruits on the 1st day of June, 1865.

STATES.	APPLES.		PEACHES.		PEARS.		GRAPES.		STRAWBERRIES.	
	Amount of apples this spring compared with an *ordinary crop.*	Appearance of the same.	Amount of peaches this spring compared with an *ordinary crop.*	Appearance of the same.	Amount of pears this spring compared with an *ordinary crop.*	Appearance of the same.	Amount of grape *bloom* this spring compared with an *ordinary crop.*	Appearance of the grape.	Amount of strawberries this spring compared with an *ordinary crop.*	Appearance of the same.
Maine	10	10 7/11	.....	.....	11	11	12	12	10 7/9	11 2/9
New Hampshire	9 3/7	10 1/7	11	11	10 1/4	10 1/4	11 1/5	10 4/5	10 2/8	11 2/5
Vermont	11 1/5	10 1/2	.....	.....	10 2/6	10	11 1/5	10 1/2	10 5/7	10 1/6
Massachusetts	9	9 7/11	8 1/3	9	10 3/5	10 4/5	10	10 3/5	10 3/5	11
Rhode Island	9 3/8	9 3/8	8 3/8	9 3/8	10	10 3/8	10	10 1/2	9 3/8	10 3/8
Connecticut	9	9 1/4	10	9 1/2	10 2/4	10 1/4	10 1/4	9 3/4	10 3/4	11 1/4
New York	10	9 1/2	9 1/2	9	10	9 3/5	10 1/2	10 1/3	11 1/3	11 1/7
New Jersey	7	9 1/4	9 1/6	9 3/4	9	10	10	10	12	11 1/4
Pennsylvania	8 1/3	9 1/5	7	8 1/3	9 1/3	10	9 1/2	9 1/4	10 1/2	10 1/9
Maryland	7	8 2/7	9	9 1/2	9	9 3/4	11	10 1/4	10 5/13	10 1/4
Delaware	11	11	10	10	10	11	12	12	12	12
Kentucky	7 1/7	9 1/5	9	9 3/5	8 1/4	9 1/3	9 1/2	9	10	10
Ohio	8 1/2	9	8	9 1/2	8 1/3	9 1/2	8	9	9 1/3	9 1/2
Michigan	11 1/3	10 1/5	8	9	9 3/8	10	10	9 4/5	10 3/10	10 1/3
Indiana	8 1/6	9 1/2	6 3/7	9 3/5	9 1/3	10	10	10 1/3	10	10 3/5
Illinois	8 1/6	9 4/5	8 1/3	9 4/7	9 1/9	10	10 3/5	10 1/3	9	9 1/2
Missouri	9 1/10	9 3/4	9 5/7	10 4/5	9 1/5	10 1/4	11 4/7	11 1/3	10 1/2	10
Wisconsin	12	11 1/3	10 1/3	10 1/3	9 3/8	10 3/4	11 3/5	10 1/2	10 1/2	10 1/5
Iowa	9 1/6	9 1/2	9	9 3/7	9 1/3	10 1/7	10 1/2	9 1/2	9 1/2	9 4/5
Minnesota	12	10 2/3	10	10	10	10	11	10	11	10 1/5
Kansas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
West Virginia	6 1/7	8	9	9 1/3	7 1/3	8 1/2	9	8 3/4	10 1/2	11
Nebraska Territory	11 1/2	12 1/2	15	10	12	12	11 1/3	11 1/3	11 1/3	11

Table showing the condition of certain crops and the general character of the weather during May, 1865.

STATES.	RASPBERRIES.		PASTURES AND CLOVER.		WEATHER FOR MAY.				
	Amount of raspberry *bloom* this spring, compared with an *ordinary crop.*	Appearance of the fruit.	Appearance of pastures during May, compared with same time last year.	Appearance of clover fields in May, compared with same time last year.	In weeks.				
					Favorable.	Wet.	Very wet.	Dry.	Very dry.
Maine	11	11	12	12½	11	32	9	.....	.....
New Hampshire	10	10⅛	12⅑	11⅜	16	9	7	.....	.....
Vermont	11	10⅕	11½	11¾	16	12	3	1	.....
Massachusetts	9⅘	10	11⅜	12⅛	17	18	13	.....	.....
Rhode Island	10	11	11⅜	11⅜	4	6	1	.....	.....
Connecticut	11	10⅛	10⅜	10¾	7	7	2	.....	.....
New York	10	10⅜	12½	12	72	47	14	13	2
New Jersey	10⅗	10⅖	9⅜	8 7/11	22	14	7	1	.....
Pennsylvania	10⅕	10	12 1/10	12 1/10	61	83	22	22	4
Maryland	10	10	10⅜	10⅛	23	22	11	.....	.....
Delaware	10	12	12	12	1	1	2	.....	.....
Kentucky	10	10⅜	12	12	16	33	46	9	.....
Ohio	10¾	10⅝	13⅓	13½	65	84	66	29	4
Michigan	10⅗	10 1/10	11⅛	11	74	19	2	28	8
Indiana	11	10¾	12½	12	59	59	54	29	6
Illinois	10⅞	10⅕	12	11½	73	51	25	43	20
Missouri	10¾	10⅕	11¾	11½	62	32	17	30	19
Wisconsin	10⅛	10	11	11⅜	41	11	1	58	27
Iowa	10½	10⅕	11	11	77	25	1	60	21
Minnesota	11	10½	11	11	47	11	1	23	6
Kansas	.....	.....	.....	.....	.....	.....	.....	.....	.....
West Virginia	10⅜	10⅛	13	12½	16	19	8	8	1
Nebraska Territory	11⅛	10⅜	11	11	13	3	1	8	3
					793	598	303	362	121

IMPORTS AND EXPORTS OF TEXTILE MATERIAL BY GREAT BRITAIN.

The following tables are given to show the vast amount of raw textile material used by Great Britain, from which the magnitude of her manufactures may be seen. The countries from which the imports are made are also shown.

In the official returns of the imports and exports of Great Britain there is a singular omission to give the *value* of the foreign imports *exported.* This is done in the tables of the imports and exports of the United States. A result of this omission is, that when the *value only* of the imports and exports of Great Britain are stated, there is always a heavy "*balance of trade*" apparently against it. Hence the argument has been urged, that a nation may grow wealthy with a heavy balance of trade against it. But when it is considered that Great Britain *exports* large quantities of what it *imports*, as will be seen from the following tables, of which no account is given of the *values*, and of which no deduction is made from the *value* of the general imports, it will be seen that, so far from the "balance of trade" being *against* Great Britain, it is largely in its favor.

The following tables are for the years 1863 and 1864.

COTTON.

Imported from—	Pounds, 1863.	Value, 1863.	Pounds, 1864.	Value, 1864.
United States	6,394,080	$3,220,990	14,148,064	$8,559,450
Bahamas and Bermuda	29,771,392	14,919,005	42,117,264	24,422,520
Mexico	19,278,112	10,339,695	25,539,024	14,770,635
Brazil	22,603,168	10,388,440	38,017,504	21,898,965
Turkey	12,352,928	5,161,040	18,954,208	8,582,540
Egypt	93,552,368	44,207,785	125,493,648	71,502,535
British East Indies	434,420,784	173,503,305	506,527,392	191,073,615
China	30,856,336	10,824,975	86,057,008	31,212,520
Other countries	20,354,096	8,824,830	36,330,608	18,995,865
Total	669,583,264	281,389,765	893,304,720	391,018,645
Exported	241,352,496		243,502,304	
Consumed in Great Britain	428,230,768		549,802,416	

WOOL.

Hanse Towns and Europe	34,325,545	10,904,570	42,038,740	14,297,230
British possessions in South Africa	20,166,617	6,215,760	19,880,805	7,123,990
British East Indies	20,670,111	5,019,170	20,425,355	4,895,215
Australia	77,173,446	30,185,065	99,037,459	44,083,130
Other countries	21,639,363	5,001,720	22,426,659	5,413,905
Total	173,975,082	58,326,285	203,809,018	75,813,470
Wool, alpaca and llama	3,402,582	2,096,575	2,664,027	1,705,610
	177,387,664		206,473,045	
Woollen rags torn up into wool	22,098,944	2,027,435	22,482,880	2,473,055

WOOL.—*Continued.*

Imported from—	Pounds, 1863.	Value, 1863.	Pounds, 1864.	Value, 1864.
Exported.				
Sheep and lambs' wool	63,926,817	.....	55,864,791	.....
Alpaca and llama	1,144	.....	68,948	.....
Total exported	63,927,961	.....	55,933,739	.....
Consumed in Great Britain	113,359,703	.....	150,439,306	.....
Add above woollen rags	22,098,944	.....	22,482,880	.....
Total consumed	135,458,647	.....	172,922,186	.....

FLAX.

Imported from—				
Russia	113,787,184	13,401,610	151,332,384	17,905,940
Holland	15,217,552	2,783,950	19,600,560	3,461,415
Belgium	16,355,584	2,813,065	17,474,688	2,993,845
Other countries	69,003,424	2,356,670	18,002,432	2,254,065
Total	163,403,744	21,355,295	206,410,064	26,615,265

(None exported.)

HEMP.

Russia	57,344,224	5,273,180	60,490,416	4,575,970
Austrian territories	14,675,472	1,365,710	17,617,488	1,741,910
British India	4,321,072	273,205	8,458,464	446,220
Philippine islands	35,041,552	2,105,020	20,601,616	1,546,255
Other countries	4,891,488	383,150	6,029,072	416,410
Total	116,273,808	9,401,265	113,197,056	8,726,765
Exported	11,660,096	.....	9,219,616	.....
Consumed in Great Britain	104,613,712	.....	103,977,440	.....
Jute, &c., in nature of hemp	140,515,760	7,879,410	229,296,144	11,151,630
Exported	18,859,456	.....	30,600,976	.....
Consumed in Great Britain	121,656,304	.....	198,695,168	.....

RAW SILK.

China	1,695,882	8,132,695	452,684	2,363,180
British East Indies	208,029	970,290	167,774	773,095
Egypt, in transit from India and China	4,779,543	23,187,275	3,401,116	18,575,660
Other countries	2,537,691	14,613,530	1,633,827	10,039,270
Total	9,221,145	46,903,790	5,655,401	31,751,205
Exported	3,852,919	.....	3,922,130	.....
Consumed in Great Britain	5,368,226	.....	1,733,271	.....

ENGLISH PRICES.

Table showing the average prices (wholesale) of wheat, beef, mutton, and potatoes in England for a period of three months in the years 1863, 1864, *and the first three months of* 1865.

Quarters of year ending—	Wheat per bushel of 60 lbs. in England and Wales.	Meat per pound at Leadenhall and Newgate markets, by the carcase.		Best potatoes per bushel of 60 lbs. at the Waterside market, Southwark.
		Beef.	*Mutton.*	
1863.				
March 31	$1 39¾	8 to 12½ cents.	10 to 14 cents.	77 to 83 cents.
June 30	1 38½	8½ to 12½ "	9½ to 13½ "	70⅜ to 83 "
September 30	1 36¼	9 to 12½ "	9½ to 13½ "	45 to 67½ "
December 31	1 21½	8 to 12½ "	10 to 14 "	38⅜ to 51⅜ "
1864.				
March 31	1 21	9 to 13 "	11 to 14 "	35 to 45 "
June 30	1 19	8½ to 12½ "	10½ to 14 "	25⅜ to 38¾ "
September 30	1 26¾	9 to 13 "	11 to 14 "	51⅜ to 77 "
December 31	1 15½	9 to 14 "	10½ to 14½ "	51⅜ to 62 "
1865.				
March 31	1 15	9 to 14 "	10½ to 14½ "	54¾ to 62½ "

Comments.—The English prices, from which the above table is compiled, are stated in shillings and pence; wheat in quarters and potatoes in tons. We have reduced them to American currency and measures, by regarding the English quarter at 480 lbs, making it eight bushels at 60 lbs. each, and the English ton at 2,240 lbs. So far as we can see, we suppose that when the quarter is intended to be 560, the quarter of a ton, it is stated to be the *imperial* quarter. But English weights are a mystery.

The above table exhibits the great uniformity of English prices compared with American, for here we have three principal causes operating on prices—production, foreign demand, and a changing paper currency. The above prices are gold values. It will be seen that the price of wheat has been declining since 1863. It was some higher in 1862, in which year the exports to Great Britain of our wheat and flour were greater than ever known before. The annual average of our exports of wheat to that nation from September 1, 1846, to September 1, 1863, is 7,241,077 bushels, but in 1861 these exports were 25,553,370; in 1862, 25,754,709 bushels; in 1863, 23,167,190 bushels; and in 1864, 16,492,943 bushels. In 1863, our exports of breadstuffs began to fall off from the high point they had reached in consequence of the short crops in Great Britain and the continent. How greatly they have fallen off in 1865 from 1864, will be seen in the subsequent tables.

These references to past American exports are necessary to enable the American farmer to see what are the *ordinary* prices of breadstuffs in Great Britain, and that the existing low prices of them there is but a return to the more usual prices, from the high rates which have prevailed from 1861 to 1864, inclusive. At this time the English farmers complain that the low price of wheat is unremunerating.

The prices of beef and mutton are remarkably uniform, and regarded as high. In Great Britain, as here, meats are not easily raised in excess of the demand,

and the farmers there, as here, find their interest in stock, rather than in grain production.

The varying price of potatoes shows that this product, when abundant, rules very low, and that it has become as uncertain in Great Britain as in the United States.

As yet there are no indications of a material change for the better in the above rates. We, therefore, again, (we might say) *and again* urge our farmers to increased care in restoring the diminished numbers of nearly all farm stock.

THE CROPS AND PRICES IN GREAT BRITAIN AND EUROPE.

The MARK LANE EXPRESS of London of May 22 thus notices the crops and prices. We purpose giving extracts from it each week, that our farmers may see the condition of European crops, and the prices they may expect from that condition.

"Although the commencement of the week was cold, the latter half was more genial and promising as to its effects on vegetation. Some frosts having followed the late copious rains, the young cereals were getting yellow and stunted; and where the wheat plants were thin and weak very little growth was made, but we have now good reason to expect a speedy revival, if many still insist that an average crop is doubtful. The markets have again been improving as to prices, and in many cases an advance of 24 cents per quarter (480 lbs) has been realized; but low values have so long been the order of the day, that millers still make their purchases with great reserve, maintaining that there are yet large stocks of home-growth in the country. For the country's sake it is to be hoped that this is partly true, as the granaries for foreign have been emptying fast, nor does there seem much prospect that the wheat used up will be readily replaced, the late large arrivals off the coast having gone off briskly, and been widely distributed. It would appear that the recent storms experienced in this country have prevailed in many parts of Europe, accompanied with much hail, and doing considerable local injury in France, Switzerland, and other parts, but not so generally as to greatly influence prices. In Paris the flour market has been rather improving, but sales were not brisk; the wheat markets in the country being unusually calm, Belgium and Holland, benefitted by the abundant rains, have rather given way, but some places in Switzerland and Germany have been advancing in prices. Hamburgh has been quiet, but the market at Danzig has resumed its activity and fully 24 cents per quarter (480 lbs) more money has been paid both for old and new wheat of fine quality."

May 29.—"The spring wheat, as well as the established plants of wheat have progressed wonderfully, and there are still some localities where the finest weather will not make up for the deficiency and weakness of the plants. The storms and rain have swept over the continent of Europe, and everywhere been welcomed, excepting in some places in France, Switzerland, and Bavaria, where they have been accompanied with heavy hailstones most destructive in their effects. Rain, however, had become so urgently needed, that any private injury is lost in the public good, and many places in France, as well as in Hungary, still need more moisture for the crops. With better foreign supplies and weather beyond expectation fine, it is not to be expected that prices could advance; indeed they have hardly been maintained, and the last market in London was the worst of the week. Abroad there has been but little difference. Paris, with sluggish demands, notes no change. Belgium shows less business, with a downward tendancy in prices, and it is the same in Holland. The markets in the interior of Germany have been very steady; while Switzerland and Bavaria, influenced by storms and small supply, show a rather upward movement. The best quality flour is quoted higher at Montreal, but not the

inferior qualities. There is no prospect this year of Australian imports, for the crops do not reach an average, and these outlying colonies will partly depend on South America imports, and possibly need something from Europe."

June 5.—"With a high temperature the crops have been advancing, (in Great Britain) but on the light lands there is still a look of poverty about the wheat very unpromi-ing, while the loams continue to have a fine and forward appearance. On the continent there has not been enough rain generally, and in many localities the prospects are below those of this country. With better foreign imports, and the weather summerlike, prices of wheat have given way 24 cents per quarter, (480 lbs.,) on the average, but the close of the week in London showed more firmness, and if farmers resist any further decline, we may soon see some reaction in the market. The continental markets have been very steady. In France, though there has been a calm, there has been no change of value; indeed, some departments (more especially in the south of France) entertain but poor prospects of a crop. Even Germany has partially suffered, and Hungary has once more experienced drought. In Switzerland some places look very unpromising; and though the rains of this week may extend over the continent, there are fears that they will come too late to turn the scale in favor of plenty where the growth is forward. Belgium, Holland, and Italy were all wanting more rain, and prices were much as previously reported."

June 19.—"The long prevalence of dry weather is likely to lessen the crop of oats and other spring grain, as indeed there are great complaints about the former already. Again, with wheat the *thin* pieces are past remedy, as the blooming time has come, and whatever the gatherings be, if the sun continues to do duty as hitherto, before long we shall be capable of ju lging by sample. But the critical period has arrived, and whether we shall want large or only average imports through the next cereal season depends upon the course of the next four weeks. Much of a crop is not expected in France, and the rye has generally suffered on the continent, though the late rains have made matters more hopeful in Hungary. In Germany there have been complaints of cold nights and wet lately, and so many untoward things may yet happen, that it would be unwise to make any calculation upon the harvest. Prices this week have very little changed," &c.

June 26.—"Some of the spring wheat has been put in jeopardy from the long prevalence of dry weather and northeasterly winds, and our first anticipations, that were formed on the sudden outbreak of summer in April last, must be considerably abated with regard to the wheat crop. An early season is not always the best; and we have some apprehensions that our gatherings, generally, will be less than an average. Besides the shortness of the oats, and the withered appearance of some of the barley, the bean-pods have not been filling well, and many of the peas have suffered. Neither are foreign advices favorable. In Southern Russia the drought has been extreme, and very little of the cereals is expected. The rye and linseed on the continent are very defective, and it is doubtful whether the wheat in the best wheat countries will prove an average. Our markets, therefore, have somewhat recovered from the late depression, and prices have been looking up, many places noting an improvement of 24 cents per 480 lbs. In Paris prices have rather hardened, though the country markets for wheat have somewhat given way. Belgium and Holland show great firmness or some advance. In Germany prices have been firm, but our accounts from Russia as to the drought are somewhat alarming, and a year of plenty must not now be thought of, as a fall of rain, though favorable to the filling out of the ear, would be too late for the formation of fresh heads. We infer, therefore, that European imports will be on a very moderate scale, especially as it is affirmed that the growing crops in some localities of the northwest have suffered by drought."

FALLING OFF OF THE TRADE BETWEEN GREAT BRITAIN AND THE UNITED STATES.

The following table of the imports and exports of Great Britain from and to the United States *for four months*—from January 1, 1865, to May 1—compared with the same time last year, is prepared to show the falling off of the trade between the two nations. The leading articles only of import and export are given, and where the English tables designate the countries. (For American returns see the tables of exports from New York.)

Imports of Great Britain from the United States.

Articles.	Quantities imported.	
	Four months of 1864.	Four months of 1885.
Cotton ..... pounds..	1,167,936	4,259,248
Petroleum ..... tuns..	3,082	1,808
Wheat ..... bushels..	5,292,747	238,775
Flour ..... pounds..	91,459,984	10,554,656

As the English tables of commerce do not show the *countries* from which its imports are made in all articles, we add the following report of our exports to Great Britain for the same time nearly, as given in the New York Shipping and Commercial List.

Articles.	1864.	1865.
Beef ..... tierces..	37,635	28,098
Beef ..... barrels..	3,104	1,746
Pork ..... tierces..	25	20
Pork ..... barrels..	23,621	9,907
Bacon ..... pounds..	72,035,900	22,631,300
Lard ..... do....	5,288,200	5,896,900
Butter ..... do....	4,326,900	6,116,700
Cheese ..... do....	8,699,300	7,940,600

Exports of Great Britain to the United States.

Articles.	Quantities exported.	
	Four months of 1864.	Four months of 1865.
Wool, (imported)....pounds..	2,727,903	1,362,145
Soda....do....	41,459,264	26,024,696
Coal....tons..	64,821	47,656
Cotton goods....yards..	34,866,362	16,510,976
Cotton thread....pounds..	457,476	175,259
Earthern and procelain wares....packages..	28,546	17,992
Linen goods....yards..	33,969,426	25,486,866
Linen thread....pounds..	784,605	484,459
Pig and puddled iron....tons..	32,606	7,476
Bar iron, &c....do...	41,474	5,028
Railroad iron....do...	56,673	4,902
Iron castings....do...	248	34
Iron, hoops, sheet, and boiler....do...	10,487	1,109
Iron, wrought....do...	7,035	2,906
Iron, miscellaneous....pounds..	274,736	248,762
Lead....tons..	7,360	271
Tin plates....pounds..	28,787,024	23,258,928
Oil, (seed)....gallons..	311,133	240
Salt....tons..	28,005	16,261
Silk goods....yards..	254,205	115,307
Silk handkerchiefs....dozen..	10,634	732
Ribbons, silk....pounds..	18,130	6,849
Spirits....gallons..	46,777	2,435
Wool, (domestic)....pounds..	487,326	3,360
Woollen goods....yards..	3,600,420	991,128
Carpets, &c....do...	1,084,105	206,373
Shawls....number..	141,519	27,300
Woollen and worsted goods....yards..	25,793,676	12,982,180
Millinery, &c....value..	$2,555,190	$1,220,705
Hardware....do...	234,900	187,020
Manufactures of steel....do...	200,415	113,915
Manufactures of German silver....do...	620,695	261,745
Other silk goods....do...	249,940	161,640
Mixed silk goods....do...	106,030	49,850

IMPORTS OF WOOL AT NEW YORK FOR SIX MONTHS FROM JANUARY 1, 1865.

The following table, taken from the Journal of Commerce, shows the *weight* and *gold value* of foreign wool imported at New York since January 1, 1865, and up to the 1st day of July, and the countries from whence imported, compared with the import of the same for the same time in 1864.

	1864.		1865.	
	Pounds.	*Value.*	*Pounds.*	*Value.*
England	5,968,064	$1,190,427	1,235,972	$304,877
Argentine Republic	9,675,155	1,482,531	8,183,394	1,047,117
France	5,558,218	1,035,975	596,432	103,227
Belgium	857,631	210,913	----	----
Africa	6,924,243	1,258,924	2,132,067	381,925
Brazil	865,225	141,753	426,686	56,438
Tuscany	114,523	6,912	----	----
Bremen	55,791	16,235	----	----
New Granada	433,251	95,360	1,105,262	240,301
Spain	93,339	15,720	----	----
Hamburg	141,208	21,123	78,018	9,280
Gibraltar	83,699	14,316	----	----
Portugal	165,988	27,359	----	----
British West Indies	80,939	8,084	652	63
Turkey	403,915	103,261	4,180	216
Dutch West Indies	7,077	702	1,262	120
Mexico	323,875	41,390	210,577	25,959
Cisplatine Republic	2,447,762	440,489	150,595	13,421
Russia	3,000,152	522,465	2,217,113	322,501
British East Indies	----	----	12,706	3,241
British possessions in Africa	514,954	93,892	----	----
Chili	494,639	72,162	439,145	49,420
China	4,800	439	906	125
Danish West Indies	----	----	2,582	290
Greece	----	----	4,097	462
British Australia	----	----	403,631	77,732
Total for 6 months	38,218,430	6,800,432	17,205,277	2,636,715

The total pounds and value for the entire year of 1863 were: 48,744,901. $8,121,032.
The total pounds and value for the entire year of 1864 were: 56,874,128. $9,418,291.

COMSTOCK'S ROTARY SPADER.

We publish below two accounts of the first trial in Great Britain of this important agricultural implement. It is an American invention by Mr. Comstock of Indianapolis, the model of which we examined, and rejoice to see its then promise so satisfactorily realized. It is not in the scope of these reports to notice inventions, however meritorious, unless they in some way assume a nationality. We all remember how our national pride was stirred within us when we read the triumph of the American mowers and reapers in England and France. So likewise we now experience a similar gratification in reading these accounts

of a like triumph, which, if not so marked and prominent as that of the reapers and mowers, nevertheless, is of the greatest importance to agriculture, and awakes the American within us.

The "FIELD," a leading agricultural paper of England, thus notices the trial of the rotary spader:

"This machine, the offspring of the inventive faculty so often found in the United States, involves more or less the introduction of a new principle into the operation of tillage. It was at one time thought to be indispensable that the soil to be prepared thoroughly as a seed bed required to be completely turned over in order to bring the subsoil to the surface to be acted upon by the atmosphere; but experience has since shown that to bring the subsoil within atmospheric influence it was only necessary to stir, and so render it pervious to the air. Hence came into play all that family of implements known under those euphonious names of grubbers, scarifiers, and scufflers. The object in these was to substitute the action of the tine for that of the plough, but the rotary spader is a step in advance of these implements, both in its action and in its effect upon the soil.

"The spader consists, as will be seen from the accompanying sketch, of a framework of an axle, connecting two thick, irregularly shaped pieces of iron, and a series of iron rods or forked bars, armed with strongly set tines of forged steel, each fixed into a small iron wheel at either end, rotating with the bars as an axle. These rods or bars, when the machine is in motion, revolves upon the edge of the outer iron sheets or cams, which are circular upwards, but flat underneath. A lever rod, worked from the seat, puts these tines into gear, and the forked bars, in rotating upon the edges of the cams, press, by the weight of the machine, the tines into the earth, the heaviest pressure taking place just as the tines are turning upwards and put out of gear. During this action the soil is thoroughly broken and thrown up continuously while the machine progresses, and as the forked bars ascend. After the work is done the forked bars extend the distance between each other, coming close together when they are again under the cams, and the tines are pressed into the earth. The machine is worked by one person, who drives from the seat, which is protected from the thrown-up soil by a sheet of corrugated iron, and the driver can at the same time attend to the progress of the operation. On light land, as in the prairies of America, a single operation is found amply sufficient to pulverize the soil; but on heavy lands, and on clays especially, it would be required to go twice over the ground, and then with a light harrow passed over to collect the weeds and render the surface smooth, a thoroughly comminuted seed bed would be the satisfactory result. The advantages over the plough are, first, that while with the plough the depth of the action rarely exceeds six inches, the spader takes eight inches the full length of the tines; again, the action of the plough as it works necessarily produces a hard pan, through which, on clay soils, the roots of plants could scarcely penetrate; the action of the tines, on the contrary, not only breaks up the surface, but scarifies the subsoil, and thus renders it easily permeable. Again, there is an enormous saving both of manual and horse labor. It has been calculated that to plough an acre, making a furrow one foot wide, a team travels over eight miles and a quarter of ground. Now, with a spader, three feet wide only, the horse-work for two acres of ploughing is the same as would be sufficient to cover six acres of ground with a spader. The laborer, too, instead of toiling through the heavy soil and wasting his strength, reserves his power, and at the same time is able to give all his attention to the efficient working of the machine.

"A trial of the rotary spader took place on Friday last, 19th instant, on the farm of Mr. Adams, of East Ham, Essex. The land here is rather stiff, but

very well worked, the ground being used chiefly for the cultivation of vegetables for the London markets. A rotary spader of five tines, and three feet wide, was brought out, and four horses attached. The machine was set in motion, and by the lever the tines were thrown into working gear. On inspecting the soil after the operation, it was found broken up to a depth of eight inches good —the length of the tines. From the nature of the ground it was worked a second time. The clods were now thoroughly broken up, and with a light harrow passed over to collect the weeds, which the action of the tines partially throws to the surface, the ground would have been perfectly prepared as a seed-bed. The machine worked admirably well in all its parts, and is a complete specimen of good mechanism. There were no stoppages; no mistakes were made, no breakage of any kind; and, considering that this was the first trial in this country, the inventor deserves credit both for the construction of the machine and for the principle of its construction. On light land, but one operation would be required; and it is evident that even on wet land it will work well, as the tines are self-cleansing. As we have already imported so many inventions in agricultural machines from America, the spader will only add another laurel to the ingenuity so often previously displayed. That the machine may want to be adapted to the requirements of this country may be admitted, especially in being made applicable to the steam engine, which can readily be done; but from the simplicity of its construction, the admirable working of all its parts, and the excellent and economical results that will be obtained from its introduction, it cannot fail to recommend itself to the agricultural community at large."

The "ENGINEER," an English paper of the order of the Scientific American, devoted more generally, however, to scientific subjects, thus speaks of the same trial.

"*Comstock's Rotary Spading Machine.*—On Friday last some very satisfactory trials of the above machine were made at Pleshett Hall, East Ham, on the property of Mr. William Adams, which showed in the plainest manner the admirable action and working of the implement. It has been designed to accomplish what has hitherto been unattained, viz., the construction of a machine which by a rotary motion shall dig up and disintegrate the soil, in a similar manner to the action of a man digging with a fork or spade; with this difference, that during the action of the digging the machine shall not press on the ground to obtain the leverage, as the man is obliged to do in using the spade or fork. The machine tried was one of the small class, designed to work on light soils, and penetrate to the depth of eight inches in working. It takes a breadth of three feet, and digs completely down to the depth named, when drawn with four horses; and will break up in the course of a day with this force, on moderately light land, from six to seven acres. The soil was beautifully opened up to the depth of eight inches, which depth was most evenly maintained over the whole surface on which the implement passed, and a second passage of the implement over the same ground left it in a most completely pulverized state, quite—as some of the gentlemen present remarked—like an onion bed."

THE WHEAT MIDGE AND THE WHEAT WEEVIL.

Several of our correspondents, in alluding to the injury sustained by the wheat crop from insects, speak of one of these as the *weevil*, when the *midge* is obviously meant. The midge attacks the grain in the *field;* the weevil when it is in the *garner*.

Mr. Glover, the entomologist of the department, in a communication published in the Patent Office report of 1854, says of the rice weevil that it resembles the grain weevil in size, shape and color, and must not be confounded with the *so-called* red weevil of Ohio and other parts of the west. This *so-called weevil* is the *wheat midge*, and is the larva or worm of a two-winged gnat or fly, properly called the wheat midge. The *midge* attacks wheat only when in the *flower* or *immature* state; whereas the true *weevils* are beetles furnished with hard wing-cases, and long slender snouts, with which they attack grain or corn, only when *ripened* and *hard*.

The weevil deposits its eggs on the grains when in the granary; but the midge deposits hers in the beginning of July in the opening flowers of the grain, or when the wheat is in the milky state. The eggs of the last named hatch in about eight days, when the little yellow maggots or worms may be found within the chaffy scales of the grain. They do not exceed an eighth of an inch in length, and are often much smaller. They live on the grain when in the milky state, so that it never fills out.

There is a good deal of local complaint of the depredations of this midge, and it has been in past years often very destructive. Of the extent of these injuries we cannot now determine, but will be able to do so in the next report.

EXPORTS AND PRICES OF FARM PRODUCE.

Exports from New York of the leading agricultural products from January 1, 1865, to July 5, compared with those for the same time in 1864, and their prices in New York and Chicago on the 5th of July.

Articles.	From January 1, 1865, to July 5.	From January 1, 1864, to July 5.	Prices July 5, 1865—New York.	Prices July 6, 1865—Chicago.
Wheat flour.....bbls..	679,124	1,042,874	$5 00 to $7 65	$4 12½ to $5 75
Rye flour.....bbls..	1,408	2,103	5 30 to 5 60	4 50 to 4 75
Corn meal.....bbls..	75,542	65,506	4 50 to 5 15	.....
Wheat.....bush..	480,001	7,541,990	1 26 to 1 44	86½ to 1 07
Corn.....bush..	382,853	155,403	70 to 80	46 to 53¾
Rye.....bush..	141	405	.....	51 to 54
Barley.....bush..	.....	150	.....	55
Oats.....bush..	45,637	22,201	69 to 70	38 to 42½
Peas.....bush..	24,462	140,411	1 00 to 1 30	.....
Cotton.....bales..	21,769	22,615	32 to 50	.....
Hay.....bales..	18,145	17,428	95 per 100 lbs.	80 to 90
Hops.....bales..	12,877	15,575	10 to 30	25 to 35
Leaf tobacco.....hhds..	34,500	25,415	8½ to 22	.....
Leaf tobacco.....pkgs..	39,242	39,598	.....	.....
Manufact'd tobacco...lbs..	2,174,215	2,101,742	.....	60 to 1 25
Petroleum.....galls..	4,005,689	7,690,396	52½	.....
Pork.....bbls..	70,553	82,656	23 25 to 26 00	24 00 to 26 00
Beef.....bbls..	21,872	21,327	10 00 to 16 00	8 00 to 14 00
Beef.....tcs..	34,437	39,338	.....	.....
Cut meats.....lbs..	26,153,095	80,964,830	12 to 20	12 to 15½
Butter.....lbs..	7,583,060	5,956,373	20 to 22	.....
Cheese.....lbs..	14,039,594	14,896,807	10 to 15	12 to 17
Lard.....lbs..	16,047,833	33,744,011	15½ to 19½	17 to 18
Tallow.....lbs..	12,411,477	21,135,148	10 to 11¼	.....
Wool, (fleece).....lbs..	.....	.....	55 to 75	43 to 50

COMMENTS.—The above table exhibits the decreased exports of our leading agricultural productions. The falling off in wheat and flour is remarkable, and indicates the low prices in Great Britain. Beef and pork have attained such high rates here, that a decreased exportation was to have been expected; yet the decrease, though great in cut meats, is not at all in proportion to that of these breadstuffs. Petroleum has decreased nearly one-half, for Europeans are finding it for themselves, and the speculation in coal-oil lands is rapidly subsiding here.

With such a decreased export trade as is seen in this table let farmers beware of credits at the stores. *Individual and national economy were never more demanded than now.*

In regard to *prices of wool* we cannot better express our own views than will be found in the following article. In the tables of imports that follow will be seen the greatly increasing imports of woollen goods; and if our manufacturers cannot pay a fair price for American wool, with so great protection as is now accorded to them, and so great demand for their woollen goods as these imports show, then the American wool-grower may consider the necessity of seeking a foreign market, by opening an unrestricted trade in woollen manufactures, or, as prior to 1861, neglect one of the most useful products of the farm.

WOOL.

"As the season of the new clip is at hand, the usual influences to depress prices are being resorted to, and wool-growers will require extra nerve to contend with parties whose interest it is to buy cheap. Manufacturers, dealers, and speculators are all croakers; they are invariably so at shearing time. We hope the farmers will not be deceived by any false reasoning. There are facts affecting the great staple which should steadily be borne in mind. Leaving out of view the sudden and great changes that have taken place in the markets during the war, brought about by demand for army purposes, fluctuations in currency, &c., and looking at the records of the trade for about 40 years preceding, we find the average price of fine and medium fleece wool from 1827 to 1861, 34 years, to be 46½ cents per pound.

"During all that period foreign wools were admitted at very low duties—some descriptions entirely free. The consumption of wool in this country has at all times been largely ahead of production, and hence imported wools have generally controlled prices.

"In 1864 the clip was estimated at 90,000,000 pounds; there was imported from abroad during the year 75,000,000 pounds—most of it prior to July 1, before the new tariff took effect. Now we find, on inquiry, that the stock of old fleece is almost exhausted, and that the supply of foreign is very much reduced, while imports have fallen off 76 per cent. from last year at corresponding periods; the first four months of 1864 imports were 54,640 bales, against 16,818 in 1865. Importing wool is now, and has been for several months, a losing business; the market must improve or it will entirely cease. No, cease it cannot, will not, save for a period, as manufacturers have been and are now 'coining' money, and must be supplied with raw material.

"There seems to us no good reason for prices being below at least 80 cents per pound for the average of American fleece wool.

For 34 years we have shown the coin price was	45½ cents
Add gold premium, say 40 per cent	18¼ cents
To equal average of years, should be	63¾ cents

at the present time, without reference to the protection which the present tariff gives to the wool-grower.

"With a view to fostering and encouraging the manufacture of woollen goods

in the United States, Congress laid a duty on nearly all fabrics of wool imported from abroad of 24 cents per pound and 40 per cent. ad valorem. The following is the scale of duties on wool, viz:

"Of the value at the last port or place of export of 12 cents per pound, or less, 3 cents per pound.

"Of the value at the last port or place of export exceeding 12 cents and not exceeding 24 cents, 6 cents per pound.

"Of the value at the last port or place of export exceeding 24 cents and not exceeding 32 cents, 10 cents per pound and 10 per cent. ad valorem.

"Of the value at the last port or place of export exceeding 32 cents, 12 cents per pound and 10 per cent. ad valorem.

"When imported scoured, three times the amount of the above duties.

"Very little of the 3-cent duty wool is imported; the great bulk costs abroad from 12 to 24 cents, and pays 6 cents coin. The heaviest imports are from the River Plate, Cape of Good Hope, and Mediterranean. All the wools are imported unwashed, and waste two-thirds average in scouring, so that there is an actual duty of 18 cents per pound coin on clean wool. Add gold premium, and it gives the American wool-grower a protection of 25 cents per pound on scoured; or, say one-third off, and bring it to the condition of fleece washed on the sheep's back, and we have 17 cents per pound as against the foreign article rendered to equal condition.

"Thus leaving out of view the state of the market for the last four years, which was irregular, excited, and various, with gold and exchange, we should reason that, with the existing and natural cause, wool ought to command—

Average of 34 years prior to 1861	40.50
Premium on gold at 140	18.20
Equivalent of duty on foreign	17.00
	80.70

or, say 80¾ cents per pound.

"With the great southern markets now thrown open, an impetus is given to the manufacturing business, and it will be strange indeed if prices of wool and woollen goods do not still largely advance."—*Cor. of the Tribune.*

IMPORTS AND EXPORTS

The greatly decreased exportation of farm products, and the great uncertainty that yet exists in relation to the future demand of Great Britain and Europe for them, make the condition of our foreign trade at this time more than usually interesting. Hence we give more in detail than is customary the tables relative to the import and export trade.

IMPORTS.—TABLE 1.

Imports of dry goods at New York for the month of June, 1863, 1864, *and* 1865.

ENTERED FOR CONSUMPTION.

	1863.	1864.	1865.
Manufactures of wool	$537,604	$282,521	$1,273,639
cotton	190,804	138,269	596,375
silk	553,784	720,041	1,370,554
flax	313,658	149,692	855,041
Miscellaneous	92,822	32,951	165,052
	1,688,672	1,323,474	4,260,661

WITHDRAWN FROM WAREHOUSE.

Manufactures of wool	$325,796	$31,786	$696,181
cotton	60,089	20,254	180,618
silk	91,436	66,354	198,114
flax	107,533	55,206	258,112
Miscellaneous	15,564	3,154	36,083
	600,418	176,754	1,369,108
Add entered for consumption	1,688,672	1,323,474	4,260,661
Total thrown on market	2,289,090	1,500,228	5,629,769

TABLE 2.

Imports of dry goods from January 1, 1865, to July 1, at New York.

	1863.	1864.	1865.
Manufactures of wool	$11,824,951	$19,406,988	$9,233,195
cotton	4,679,424	5,665,918	3,529,034
silk	6,584,169	11,879,673	5,496,281
flax	5,585,856	6,032,721	2,561,781
Miscellaneous	1,725,160	2,561,781	1,289,416
Total for six months	30,399,560	46,359,979	24,624,166

TABLE 3.

Total imports of dry goods and general merchandise at New York from January 1 to July 1 and exports at the same place and for the same time.

	1863.	1864.	1865.
Total imports	$90,107,715	$129,311,035	$79,542,220
Total exports, exclusive of specie	95,117,505	92,747,942	80,693,722
Total exports of specie	20,587,619	29,268,846	17,988,916

COMMENTS ON THE FOREGOING TABLES.—We again remind our readers that in giving values to our imports and exports, that imports are stated in *gold values* at the port from whence imported, and exports stated in *currency value* at the port of New York. It is to be regretted that both are not stated *alike;* the imports ought to be given in currency values at New York, and then the nation would see how it was paying for them.

During the six months from January 1, taken together, there has been a greatly decreased importation. This is as it should have been, for by the table of our exports from New York, as given in the table headed *Exports and Prices of Farm Produce*, it will be seen how greatly these exports have decreased. A nation with nearly a thousand millions of irredeemable currency to be exporting specie to pay for imports *is simply committing suicide.* Yet, looking to the imports in the month of June, and comparing them with those of the same month in 1863 and 1864, it will be seen that we may charge ourselves with this folly. The demand for specie to export in payment for these imports has caused the recent advance in specie. This state of our foreign trade is, then, inconsistent with a return to specie payments, and will but add to the difficulties of the financial position of the whole country.

METEOROLOGY.

TO THE OBSERVERS.—In order to meet the demands of a monthly publication, it is absolutely necessary that you should complete your returns of the preceding month on the first day of the month following, and mail them on the second day.

FROM THE SMITHSONIAN INSTITUTION.

MAY, 1865.

Table showing the highest and lowest range of the thermometer, (with dates prefixed,) the mean temperature, and amount of rain, (in inches and tenths,) for May, 1865, at the following places, as given by the observers named. The daily observations were made at 7 o'clock a. m. and 2 and 9 p. m.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
MAINE.								
				°		°	°	*In.*
Steuben	Washington	J. D. Parker	17	76	3, 7	38	50.9	7.80
Lee	Penobscot	Edwin Pitman	21	80	5	34	51.4	7.14
West Waterville	Kennebec	B. F. Wilbur	17	80	7	37	54.9	2.80
Gardiner	do	Rev. F. Gardiner	77	85	6, 7	39	54.7	5.05
Lisbon	Androscoggin	Asa P. Moore						6.07
Standish	Cumberland	John P. Moulton	17	91	6	38	56.1	5.71
Cornish	York	Silas West	17	86	6	35	54.4	5.30
Cornishville	do	G. W. Guptill	17	87	6, 7	36	55.5	5.80
NEW HAMPSHIRE.								
Exeter	Rockingham	Rev. E. Nason	17	88	6	42	57.5	
Stratford	Coos	Branch Brown	31	78	13	31	51.8	4.48
Barnstead	Belknap	Chas. H. Pitman	17	87	5, 6	40	57.2	5.89
Claremont	Sullivan	S. O. Mead	17	82	6	36	53.7	
Do	do	Arthur Chase	17	88	13	34	56.1	6.20
VERMONT.								
Lunenburg	Essex	Hiram A. Cutting	15,17,31	75	5	32	48.1	6.25
Craftsbury	Orleans	Jas. A. Paddock	31	76	6, 13	34	50.8	3.70
Middlebury	Addison	H. A. Sheldon	17	79	2	36	55.1	4.19
MASSACHUSETTS.								
Topsfield	Essex	A. M. Merriam	17	88	6, 28	44	58.3	5.10
Georgetown	do	Henry M. Nelson	18	88	3, 6	41	56.2	
Newbury	do	Jno. H. Caldwell	17	88	6	41	56.8	
New Bedford	Bristol	Samuel Rodman	31	76	1, 3	46	57.7	6.17
Worcester	Worcester	Joseph Draper	17	85	1, 2, 13	45	58.0	5.43
Mendon	do	Dr. Jno. G. Metcalf	17	86	6	42	56.5	4.40

Table showing the range of the thermometer, &c., for May—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
MASSACHUSETTS-C'd.				°		°	°	*In.*
Baldwinsville	Worcester	Rev. E. Dewhurst	17	82	6	38	54.4	6.53
Amherst	Hampshire	Prof. E. S. Snell	17	86	1, 6	43	57.1	7.89
Springfield	Hampden	J. Weatherhead	17	95	13	36	56.7	8.39
Westfield	....do	Rev. E. Davis	17	87	13	40	56.3	8.32
Richmond	Berkshire	Wm. Bacon	31	86	1	38	58.2	12.58
CONNECTICUT.								
Pomfret	Windham	Rev. D. Hunt	17	83	1, 6	42	.....	2.12
Columbia	Tolland	Wm. H. Yeomans	17	88	3	40	59.4	.....
Middletown	Middlesex	Prof. John Johnston	17	90	13	44	59.7	6.85
Colebrook	Litchfield	Charlotte Rockwell	17	83	2, 12	40	56.2	.....
NEW YORK.								
Moriches	Suffolk	Miss N. Smith	31	82	12	47	61.1	5.97
South Hartford	Washington	G. M. Ingalsbe	17	90	12	36	58.9	7.53
Troy	Rensselaer	Jno. W. Heimstreet	17	88	12	40	58.5	5.93
Fishkill Landing	Dutchess	Wm. H. Denning	17	85	1, 12	46	59.7	6.45
Garrison's	Putnam	Thomas B. Arden	17	86	12	41	56.7	7.11
Throg's Neck	Westchester	Miss E. Morris	17	81	1	47	59.0	.....
Deaf & Dumb Inst.	New York	Prof. O. W. Morris	17	87	12	46	63.1	5.56
Columbia College	....do	Prof. Chas. A. Joy	17	84	12	46	59.7	3.97
St. Xavier's College	....do	Rev. Jno. M. Aubier	17	86	12	44	60.7	4.86
Flatbush	Kings	Eli T. Mack	17	82	2, 12	45	57.8	5.63
Newburgh	Orange	Jas. H. Gardiner	17, 31	85	1, 12	46	.....	7.00
Gouverneur	St. Lawrence	C. H. Russell	20	82	2	33	54.9	1.51
South Trenton	Oneida	Storrs Barrows	17	78	11	30	55.6	2.85
Cazenovia	Madison	Prof. Wm. Soule	17	83	3, 12	38	56.3	3.99
Oneida	....do	Dr. S. Spooner	16	85	2, 12	38	57.3	5.40
Sherburne	Chenango	Rev. J. R. Haswell	17	83	4	31	55.2	.....
Theresa	Jefferson	S. O. Gregory	21	80	11, 12	40	55.9	3.03
Depauville	....do	Henry Haas	16	78	2	36	58.6	.....
Oswego	Oswego	Wm. S. Malcolm	16	81	2, 12	39	56.8	2.60
Palermo	....do	E. B. Bartlett	16	84	1, 2, 12	39	54.9	3.30
Baldwinsville	Onondaga	John Bowman	17	81	2, 3, 12	37	54.8	.....
Skaneateles	....do	W. M. Beauchamp	17	84	1, 11	35	55.1	.....
Auburn	Cayuga	John B. Dill	17	92	11	40	62.2	.....
Nichols	Tioga	Robert Howell	31	88	11, 12	39	57.9	.....
Palmyra	Wayne	Stephen Hyde	17	85	2, 12	41	57.1	.....
Geneva	Ontario	Rev. W. D. Wilson	16. 17	84	2, 11, 12	38	56.1	3.92
Rochester	Monroe	Dr. M. M. Mathews	17	86	12	39	57.1	3.30
Do	....do	Prof. C. Dewey	17	86	12	38	56.1	3.30
Warsaw	Wyoming	J. P. Morse	16	85	1, 2	36	56.0	1.79
Buffalo	Erie	Wm. Ives	20	85	1, 11	38	56.0	3.38
Jamestown	Chautauqua	Rev. S. W. Roe	16	86	1, 2, 12	36	57.4	4.30
NEW JERSEY.								
Paterson	Passaic	Wm. Brooks	17	85	12	46	61.6	7.88
Newark	Essex	W. A. Whitehead	17	83	2	42	59.3	5.73
New Brunswick	Middlesex	G. W. Thompson	17	85	1	40	60.4	.....
Mount Holly	Burlington	Dr. M. J. Rhees	17	85	2	41	61.7	.....
Haddonfield	Camden	J. S. Lippincott	17	82	12	45	61.9	7.87
Greenwich	Cumberland	R. C. Sheppard	17	81	2	44	61.7	6.04

Table showing the range of the thermometer, &c., for May—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
PENNSYLVANIA.								
				°		°	°	*In.*
Blooming Grove	Pike	John Grathwohl	17	92	4, 13	28	.....	8.95
Fallsington	Bucks	Ebenezer Hance	17	83	1, 12	45	62.0	6.00
Philadelphia	Philadelphia	Pf. J. A. Kirkpatrick	17	84	2, 12	46	63.4	7.69
Germantown	....do	Thos. Meehan	17	88	12	42	.....	.....
Moorland	Montgomery	Anna Spencer	17	81	1	43	60.3	6.15
Dyberry	Wayne	Theodore Day	17	85	4	28	44.1	.....
Nazareth	Northampton	L. E. Ricksecker	17	87	1	40	61.6	.....
North Whitehall	Lehigh	Edward Kohler	17	84	4	38	61.0	.....
Oxford	Chester	Dr. Henry Duffield	17	84	12	41	62.2	7.40
Silver Spring	Lancaster	H. G. Bruckhart	17	88	1, 12	42	62.0	.....
Mount Joy	....do	J. R. Hoffer	17	88	1	47	66.2	4.75
Harrisburg	Dauphin	Dr. John Heisely	17	87	12	45	63.7	8.57
Tioga	Tioga	E. T. Bentley	17	92	3	32	58.8	4.82
Pennsville	Clearfield	Elisha Fenton	17	88	2	34	57.1	4.53
Connellsville	Fayette	John Taylor	17	86	1	32	60.6	.....
Canonsburg	Washington	Rev. Wm. Smith, D.D	16, 17	82	2	30	58.7	4.68
DELAWARE.								
Wilmington	New Castle	Dr. Urban D. Hedges	17	85	2	42	62.5	5.80
MARYLAND.								
Woodlawn	Cecil	Jas. O. McCormick	17, 31	80	12	43	61.8	5.75
Annapolis	Anne Arundel	Wm. R. Goodman	17	81	2	42	64.8	6.34
Sykesville	Carroll	Miss H. M. Baer	18	81	2, 12	43	62.4	7.00
WEST VIRGINIA.								
Cabell C. H.	Cabell	C. L. Roffe	16	86	12	40	61.5	13.27
SOUTH CAROLINA.								
Hilton Head	Beaufort	Capt. C. R. Suter	23, 24	87	28	61	73.9	3.20
MISSISSIPPI.								
Natchez	Adams	Robt. McCary	22	86	12	45	70.3	0.35
KENTUCKY.								
Louisville	Jefferson	Mrs. L. Young	16, 21	86	12	33	63.4	7.57
Chilesburg	Fayette	Dr. S D. Martin	5, 16, 17, 21	80	12	40	62.7	8.98
Danville	Boyle	O. Beatty	15, 16	86	12	39	64.5	5.82
London	Laurel	W. S. Doak	5	84	12	38	.....	.....
OHIO.								
Saybrook	Ashtabula	James B. Fraser	16	86	12	37	56.3	.....
Austinburg	....do	E. D. Winchester	16	86	11	30	57.8	2.80
New Lisbon	Columbiana	J. F. Benner	17	93	12	35	64.1	2.26
Welshfield	Geauga	B. F. Abell, A. M	17	85	1, 11	36	58.5	4.87
Milnersville	Guernsey	Rev. D. Thompson	16, 31	85	2	28	.....	2.94
Cleveland	Cuyahoga	Mr. & Mrs. G. A. Hyde	16	86	1, 12	40	58.1	2.27
Wooster	Wayne	Martin Winger	16	87	11	34	59.9	.....
Gallipolis	Gallia	A. P. Rogers	16, 17	84	12	34	61.1	10.09

Table showing the range of the thermometer, &c., for May—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
OHIO—Cont'd.				°		°	°	*In.*
Kelley's Island	Erie	Geo. C. Huntington	31	83	11	39	59.3	2.46
Norwalk	Huron	Rev. A. Newton	16	85	11	34	58.9	2.78
Westerville	Franklin	Prof. H.A.Thompson	16	82	11	36	63.8	5.76
Kingston	Ross	Prof. Jno. Haywood	16	86	12	34	62.4	9.62
Portsmouth	Scioto	L. Engelbrecht	16	83	12	41	63.9	10.45
Toledo	Lucas	Dr. J. B. Trembly	16	86	11	39	59.7	2.25
Marion	Marion	Dr. H. A. True	16, 23	83	11	35	59.7	2.71
Urbana University	Champaign	Prof. M. G. Williams	16	86	11	34	61.6	4.11
Hillsborough	Highland	J. McD. Mathews	16	81	12	34	60.8	8.30
Ripley	Brown	Dr. G. Bambach	15	93	12	41	64.6	10.94
Bethel	Clermont	Geo. W. Crane	16, 17, 21	85	11	35	53.0	8.63
Eaton	Preble	Miss Ollitippa Larsh	16	83	11	39	60.5	10.30
Cincinnati	Hamilton	Geo. W. Harper	21	83	11	44	63.0	7.72
Do	do	R. C. Phillips	16	88	12	42	65.4	8.46
College Hill	do	John. H. Wilson	16	84	12	32	61.2	9.05
Do	do	John W. Hammitt	16	85	12	35	61.7	7.88
MICHIGAN.								
Pontiac	Oakland	Jas. A. Weeks	31	84	11	36	57.6	.....
Monroe	Monroe	Miss F. Whelpley	16	85	1	40	59.5	1.42
Manchester	Washtenaw	Dr. F. M. Reasner	16	90	11	36	58.6	.....
St. Agric. College	Ingham	Prof. R. C. Kedzie	31	83	1, 11	39	57.7	1.77
Homestead	Benzie	G. E. Steele	31	88	10	29	55.6	.....
INDIANA.								
Vevay	Switzerland	Chas. G. Boerner	21	89	11	40	64.4	11.80
Pennville	Jay	Miriam Griest	16	87	11	36	63.9	.....
Richmond	Wayne	John Valentine	16	82	11	37	60.0	5.79
Albion	Noble	Wm. Bonar	21	90	11	36	57.0	.....
Spiceland	Henry	Wm. Dawson	15, 31	84	11	39	59.1	6.50
Madison	Jefferson	Rev. S. Collins	16	80	12	44	.....	10.74
Indianapolis	Marion	W. W. Butterfield	16	86	11	41	62.7	.....
Rensselaer	Jasper	Dr. J. H. Loughridge	16	84	6	38	61.4	2.95
Farmers' Institute	Tippecanoe	Isaac E. Windle	17	87	10	41	62.2	4.13
New Harmony	Posey	Jno. Chappellsmith	16	87	1	44	66.6	5.98
ILLINOIS.								
Chicago	Cook	Samuel Brookes	31	88	1	30	52.4	.....
Evanston	do	Mark Harrington	16	84	2	34	54.9	1.75
Riley	McHenry	E. Babcock	31	85	10	34	53.3	1.61
Sandwich	DeKalb	Dr. N. E. Ballou	31	85	10	35	60.1	0.97
Winnebago	Winnebago	Jas. W. Tolman	30, 31	86	1, 11	41	60.3	1.56
Wyanet	Bureau	Miss & E. S. Phelps	28	85	11	32	60.4	1.35
Tiskilwa	do	Verry Aldrich	4	88	1, 10, 11	40	59.5	.....
Elmira	Stark	O. A. Blanchard	30	86	1, 13	43	63.4	2.56
Hennepin	Putnam	Smiley Shepherd	31	84	.....	.....	.....	.....
Peoria	Peoria	Frederick Brendel	5, 20, 31	82	11	44	63.8	2.34
Pekin	Tazewell	J. H. Riblett	5	88	13	41	63.8	2.46
Springfield	Sangamon	G. M. Brinkerhoff	24	92	1	42	68.3	.....
Murraysville	Morgan	Dr. J. & Miss Grant	4, 24	87	10	40	64.6	1.50
Galesburg	Knox	Pf. Wm. Livingston	28	83	1, 10	43	60.5	1.58
Augusta	Hancock	S. B. Mead, M. D	20	87	1, 11	42	63.2	0.70

Table showing the range of the thermometer, &c., for May—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
WISCONSIN.				°		°	°	*In.*
Manitowoc	Manitowoc	Jacob Lüps	21	80	10	36	53.1	0.27
Milwaukee	Milwaukee	I. A. Lapham, LL.D	16	85	11	29	53.0	1.11
Do	do	Carl Winkler	16	85	10	36	53.3	1.36
Green Bay	Brown	Friedrich Deckner	31	92	10	34	56.3	0.88
Bloomfield	Walworth	Wm. H. Whiting	31	81	10	26	56.2	.....
Delavan	do	Leveus Eddy	31	85	10	35	57.6	1.32
Waupacca	Waupacca	H. C. Mead	30	93	10	38	61.2	.....
Embarrass	do	Edward E. Breed	31	100	10, 11	28	60.8	2.85
Weyauwega	do	John C. Hicks	30	92	11	34	60.7	0.89
Rocky Run	Columbia	W. W. Curtis	30	90	10	39	60.1	1.22
Baraboo	Sauk	M. C. Waite	30, 31	90	10	32	60.1	0.25
Beloit	Rock	Henry D. Porter	31	87	1	35	59.2	0.73
MINNESOTA.								
Afton	Washington	Dr. & Mrs. Babcock	28, 29	90	10	34	56.4	.....
St. Paul	Ramsey	Rev. A. B. Paterson	28	87	2, 10	35	58.9	4.20
Minneapolis	Hennepin	Wm. Cheney	30	91	2	35	60.9	.....
Sibley	Sibley	C. W. & C. E. Woodbury.	28	96	10	29	61.4	3.73
New Ulm	Brown	Charles Roos	30	92	12	38	62.1	6.13
IOWA.								
Lyons	Clinton	P. J. Farnsworth, M.D	28	85	11	40	62.0	1.55
Dubuque	Dubuque	Asa Horr, M. D	28	87	1, 10	41	62.0	1.19
Muscatine	Muscatine	J. P. Walton	28	86	1	37	57.1	1.05
Fort Madison	Lee	Daniel McCready	28	88	13	40	63.4	1.22
Monticello	Jones	Chauncey Mead	28	91	10	37	59.9	0.84
Guttenberg	Clayton	P. Dorweiler	30	84	10	39	59.7	.....
Mt. Vernon	Linn	Pf. Alonzo Collins	20	88	12	32	61.8	.....
Iowa City	Johnson	Pf. Theo. S. Parvin	27, 28	86	11	32	61.4	2.72
Independence	Buchanan	A. C. Wheaton	28, 30	89	10	33	60.0	2.50
Waterloo	Black Hawk	T. Steed	28	87	7	22	63.0	.....
Iowa Falls	Hardin	N. Townsend	20	84	13	30	50.9	3.77
Algona	Kossuth	Dr. F. & Miss McCoy	30	90	10	31	59.4	1.63
MISSOURI.								
St. Louis	St. Louis	Geo. Engelmann	20	88	10	47	66.8	5.66
St. Louis University	do	F. H. Stuntebeck	21	88	11	51	68.5	3.81
Allenton	do	A. Fendier	20	92	11	41	64.0	4.63
Harrison	Cass	John Christian	21	88	11	36	65.6	4.82
Easton	Buchanan	P. B. Sibley	21, 29	90	10	39	68.5	1.10
KANSAS.								
Olatha	Johnson	W. Beckwith	4	91	11	32	.....	11.25
Atchison	Atchison	Dr. H. B. & Miss Horn	4	94	11	30	62.8	.....
State Ag. College	Riley	H. L. Denison	4	90	10, 11	32	68.2	2.04
Fort Riley	Davis	C. E. Sullivan	4, 20	95	10	34	68.0	1.10
NEBRASKA TER.								
Elkhorn	Washington	John S. Bowen	29	90	10	37	63.2	.....
Nursery Hill	Otoe	R. O. Thompson	4, 21, 29	91	11	32	63.8	2.94
Bellevue	Sarpy	Rev. Wm. Hamilton	3	87	10	39	61.2	1.45

Table showing the range of the thermometer, &c., for May—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
UTAH TERRITORY.								
Great Salt Lake City	Great Salt Lake..	W. W. Phelps.....	27, 29, 31	88	1	38	68.2	2.60
CALIFORNIA.								
Monterey.....	Monterey.....	Dr. C. A. Canfield ..	7	85	23	50	59.7	0.31
Sacramento.....	Sacramento.....	Dr. T. M. Logan ...	7	97	24, 31	57	70.2	.....

Addenda, for April, 1865.

KENTUCKY.								
Danville.....	Boyle	O. Beatty	20	84	22	40	58.9	5.02
ILLINOIS.								
Riley.....	McHenry.....	E. Babcock.....	17	72	8	13	45.5	3.62
MINNESOTA.								
Beaver Bay.....	Lake.....	C. Wieland.....	25	67	8	5	36.4	3.45
UTAH TER.								
St. George.....	Washington.....	Geo. A. Burgon	30	96	6	29	57.4	0.52
Great Salt Lake City	Great Salt Lake .	W. W. Phelps.....	28	76	6	20	42.5	2.43
ARIZONA TER.								
Fort Whipple.....	Yavapai.....	Dr. Elliot Cone.....	30	88	6	24	46.9	.....
WASHINGTON TER.								
Neeah Bay	Clallam	James G. Swan.....	20	57	1, 4, 5	32	43.7	6.50
CALIFORNIA.								
Monterey	Monterey.....	Dr. C. A. Canfield...	21	76	3, 6, 8, 18	44	53.1	0.36
Sacramento	Sacramento.....	Dr. T. M. Logan....	30	80	5	43	57.4	1.37
Meadow Valley.....	Plumas.....	Mrs. M. D. Smith...	24	79	5	23	48.1	0.75

Table showing the average temperature and fall of rain (in inches and tenths) for the month of May, for each of the years named, and for the five years first named, collectively, with the average number of places in each State in which the observations were made.

States and Territories.	Av. number of places.	Averages, 1855.		Averages, 1856.		Averages, 1857.		Averages, 1858.		Averages, 1859.		Av. for five years.		Averages, 1863.		Averages, 1864.		Averages, 1865.	
		Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.	Mean temp.	Mean rain.
		Deg.	*In.*	*Deg.*	*In.*	*Deg.*	*In.*	*Deg.*	*In.*	*Deg.*	*In.*	*Deg.*	*In.*	*Deg.*	*In.*	*Deg.*	*In.*	*Deg.*	*In.*
Maine	6	49.7	3.4	49.6	5.7	51.7	4.1	50.1	3.5	54.7	3.5	51.1	4.1	54.5	3.0	53.4	3.47	54.0	5.74
New Hampshire	3	54.7	1.1	52.4	4.6	54.5	6.0	51.7	3.6	51.2	2.2	52.9	3.5	55.8	4.5	54.9	4.25	55.3	5.49
Vermont	4	54.2	0.2	54.7	3.0	52.1	4.8	52.3	3.3	57.9	1.8	53.8	2.6	55.6	5.6	56.3	3.95	51.3	4.71
Massachusetts	12	55.1	2.9	52.4	6.3	54.6	5.2	52.8	3.1	57.6	4.8	54.5	4.5	57.6	3.2	58.7	2.35	56.9	7.20
Rhode Island	1	54.3	2.6	53.5	4.1	51.8	4.3	53.4	2.4	56.9	3.4	54.0	3.4	.....	.....	.....	.....	.....	.....
Connecticut	4	55.3	2.2	53.1	5.5	54.1	5.2	53.1	2.8	57.5	4.0	54.6	4.0	58.2	3.7	60.2	32.8	58.4	4.49
New York	17	56.7	2.8	54.0	3.3	53.9	4.6	54.1	4.4	61.5	2.8	56.0	3.6	58.0	3.7	61.0	4.62	57.6	4.46
New Jersey	4	60.2	2.7	57.3	4.0	56.6	8.1	55.4	4.7	60.6	1.8	58.0	4.2	61.3	2.7	64.7	6.43	61.1	6.88
Pennsylvania	19	61.1	3.0	58.5	2.8	57.7	6.6	57.8	7.4	64.3	2.1	59.9	4.4	60.8	2.5	64.1	6.62	60.1	6.35
Delaware	1	.....	.....	57.8	.....	69.2	.....	61.7	4.86	.....	1.70	62.6	3.28	.....	.....	.....	.....	62.5	5.80
Maryland	4	64.0	2.6	62.1	3.5	61.8	6.3	59.0	6.7	64.1	3.5	62.2	4.5	63.5	4.3	67.9	6.19	63.0	6.36
District of Columbia	1	64.2	1.4	55.3	4.2	61.3	5.7	60.9	7.3	64.8	3.9	61.3	4.5	60.0	3.8	68.0	4.62	.....	.....
South Carolina	6	72.8	4.3	70.8	4.2	69.5	2.4	72.2	2.8	70.2	2.5	71.4	3.2	.....	.....	72.0	4.13	73.9	3.20
Tennessee	2	67.5	3.9	63.7	6.3	64.0	5.4	67.4	6.1	69.2	2.5	66.4	4.8	.....	.....	.....	.....	.....	.....
Kentucky	4	66.2	3.1	64.1	2.5	59.3	6.2	64.4	6.4	69.0	1.7	64.6	4.0	.....	.....	63.5	4.18	63.5	7.46
Ohio	20	62.4	3.8	60.3	2.9	55.3	5.0	58.8	7.3	65.5	2.6	60.4	4.3	62.6	2.3	62.5	3.17	60.7	6.24
Michigan	7	59.1	4.5	52.9	3.9	52.1	3.3	52.3	6.1	56.9	2.9	54.6	3.5	61.8	.....	58.6	2.71	57.8	1.60
Indiana	5	64.5	3.5	61.9	3.0	57.4	4.4	60.7	8.9	67.1	2.2	62.3	4.4	64.5	3.0	64.2	2.50	61.9	6.84
Illinois	13	64.1	5.1	61.0	4.4	56.5	2.9	58.2	8.1	63.3	4.3	60.6	5.9	59.1	3.4	63.4	1.79	60.6	1.67
Missouri	2	66.8	7.2	62.1	3.0	59.2	3.1	64.0	10.6	68.2	6.6	64.1	5.4	55.3	2.4	66.6	4.01	66.7	4.00
Wisconsin	6	60.3	3.1	55.0	3.5	50.4	4.1	52.1	6.8	56.8	4.3	54.9	4.5	56.7	3.9	55.0	1.79	57.6	1.09
Iowa	9	62.9	3.2	60.8	3.5	56.2	7.3	55.7	7.3	63.2	5.4	59.8	5.3	62.7	3.6	61.3	3.02	60.1	1.82
Minnesota	3	60.9	.....	58.9	4.2	52.4	2.8	51.7	2.8	53.5	5.6	55.5	3.8	57.3	1.9	60.8	0.74	59.9	4.69
Nebraska Territory	3	.....	.....	.....	.....	.....	.....	53.1	4.4	64.6	5.6	58.6	5.0	63.4	.....	63.6	.....	62.7	2.20
Kansas	3	.....	.....	.....	.....	55.8	2.7	61.7	5.2	66.6	8.0	60.7	5.2	69.5	4.9	65.4	1.52	66.3	4.80
Utah Territory	1	.....	.....	.....	.....	58.0	0.8	.....	.....	57.3	1.9	57.7	1.3	.....	.....	.....	.....	68.2	2.60
California	2	.....	.....	61.9	1.9	63.6	.....	62.3	0.2	63.0	1.3	62.7	1.1	.....	.....	.....	.....	65.0	0.31

NOTES OF THE WEATHER—MAY, 1865.

A severe tornado passed from about Maryland to Connecticut on the afternoon of the 11th of May. This atmospheric disturbance, though exhibited in so violent a form in only a limited district, extended over the whole country, as shown by the general prevalence at that period of a reduced temperature, and at a larger portion of the stations by the lowest daily mean of the month.

St. John, New Brunswick.—The amount of rain in this May was nearly double that of any May for the last fifteen years at least. The highest month's rain on record (for May) since 1850 is 5.4 inches, and the average for the same period (leaving out this year) 3.07 inches; but this year the May rain was 10.33 inches. Once only since 1850 has any month's rain been greater than for May last, and that was in November, 1854, when the rain and melted snow was upward of 14½ inches.

West Waterville, Maine.—May 16.—First blossoms of cherry. 21st, first blossoms of apple tree appear.

Lisbon, Maine.—May 13.—Ice formed last night in ditch in open air a sixteenth of an inch thick. 31, the month has been unfavorable for farming operations on account of wet weather, which has hindered planting in many localities.

Lee, Maine.—May 27.—Cherries in blossom. 31, apple trees in blossom.

Gardiner, Maine.—The temperature of the month was one degree higher than the average of the previous twenty-eight years. The amount of moisture was more than an inch less than the average for the previous twenty-six years.

Steuben, Maine.—May 19.—A terrible frost this morning, the ground all white, and frozen a little; leaves also frozen. Ice formed in pails.

Exeter, New Hampshire.—May 31.—Season two weeks earlier than last year.

Claremont, New Hampshire.—May 13.—Hard frost and freeze. The effect was nearly dissipated by a very heavy fog, which enveloped vegetation from 5½ to 7½ a. m.; no material injury was done. May 27, light frost upon frosty places; no harm done.

Stratford, New Hampshire.—May 12th.—An inch and a half of snow fell to-day. 13th, hard frost this morning; ice a tenth of an inch thick. 14th, strawberries in bloom. 27th, apple trees beginning to bloom.

Claremont, New Hampshire.—May 1.—Forest trees all leafed out, cherry trees in bloom on the 5th, pear trees on the 15th, and apple trees on the 20th.

Craftsbury, Vermont.—May 12.—Nearly three inches of snow fell this morning, which was not wholly melted till about 2 o'clock p. m.

Lunenburg, Vermont.—No frost this month, and no freezing. An inch of snow fell on the 12th.

Middlebury, Vermont.—A quarter of an inch of snow fell on the 12th. Frost on the 2d, 13th, 24th, and 27th.

Worcester, Massachusetts.—May 13.—Slight frost this morning.

Baldwinsville, Massachusetts.—May 13.—Very heavy white frost this morning; grass crisped with frost. Ice said to have been formed in some places quite thick.

New Bedford, Massachusetts.—May 1.—Pear trees begin to bloom. 31, forest trees, with few exceptions, in full foliage.

Westfield, Massachusetts.—The month of May has been unusually wet; so much rain as 8.32 inches has not fallen in May for many years, and only in three different months for more than ten years, viz: In July, 1863, 10.31 inches; in June, 1862, 11.94 inches; and in August, 1856, 14.18 inches.

Colebrook, Connecticut.—May 12.—Frost last night.

Nichols, New York.—May 7.—Apples begin to bloom; stormed all night; hills in the morning white with snow. A few farmers planted corn on the 13th and 21st; a majority on the 26th and 27th. The greater part of the month was too wet for farm work.

Theresa, New York.—May 13.—Hard frost; frost also on the 24th, 25th, and 26th. During the past winter the ground was covered with snow one hundred and eleven days, from November to April.

Palmyra, New York.—May 1.—Erie canal opened. 12th, ice formed last night. 24th, slight frost last night; no perceptible injury done.

South Trenton, New York.—May 12.—Hills covered with snow. 19th, commenced planting corn. 23d, white frost; not any damage.

South Hartford, New York.—May 12.—A light white frost this morning, doing no damage. 13th, an inch of snow fell about daylight, giving the surrounding hills an appearance of winter.

Jamestown, New York.—May 11.—Snow-flakes fell thick and fast this morning. 12th, ice was formed this morning nearly a quarter of an inch thick.

Rochester, New York.—May 12.—A white frost this morning; light, but sufficient to kill tomato plants.

Skaneateles, New York.—Frost on the 23d and 24th of May.

Cazenovia, New York.—May 15.—Plums and cherries in bloom. 20th, apples in bloom. 22d, strawberries in bloom.

New York city.—May 11.—A tornado at 6.30 to 6.45 p. m. It seemed to go in streaks; for instance, it blew with great violence in Brooklyn, unroofing houses, &c. In the harbor some vessels dragged their anchors, though not much damage was sustained, while in the main part of the city it was comparatively mild; but at Manhattanville and vicinity it unroofed a large school-house, carrying the roof bodily some distance.—*Professor O. W. Morris.*

Haddonfield, New Jersey.—May 11.—From 6 to 6¼ p. m. heavy showers of rain with lightning in southwest; 9 p. m. heavy rain.

Newark, New Jersey.—May 11.—At 6.40 p. m. the unusual occurrence of a tornado, suddenly breaking upon the city from a point somewhat south of west, startled and alarmed the inhabitants. Fortunately it was only of a few minutes' duration, or its consequences would have been most disastrous. As it was, the damage done to roofs, walls, and steeples, fences and trees, on the routes it travelled, (for the wind appeared to move in veins,) will cause its visit to be remembered by many. The mean temperature of May was about seven-tenths of a degree higher than the average of the same month during the preceding twenty years.

Greenwich, New Jersey.—May 14.—First wheat head seen. 18th, strawberries ripe. 28th, potatoes blossomed.

Mount Holly, New Jersey.—May 11.—At 5½ p. m. wind S. W.; heavy bank of clouds rising from the N. W. Began to blow a strong gale at 6 p. m.; began to rain at 6. 15 p. m., with thunder and diffuse lightning. The gale amounted to a hurricane in parts of the surrounding country. Trees were blown down about four miles to the west of this place, and also to the east and southeast. As many as thirty or forty were uprooted in a single orchard.

Greenwich, New Jersey.—May 11.—At 6.20 p. m. rain falling in large drops. Cloud came up very quickly. It did not look like rain at 6 p. m. Clouds passed to the north, east, and south, and from that in the south forked lightning and crashing thunder proceeded.

Passaic Valley, New Jersey.—May 11.—Wind light till 6.46 p. m., when one of the most violent tornadoes ever witnessed here commenced suddenly. The wind blew a perfect hurricane at first from the west, and then varying be-

tween southwest and northwest. The lightning was almost without intermission, and the thunder very heavy. The rain poured down in torrents. The tornado lasted sixteen minutes, but the rain continued through the night. Some fruit trees were torn up by the roots.

Germantown, Pennsylvania.—May 11.—Thunder-storm, at 6 p. m. from the west with high wind and hail.

Byberry, Pennsylvania.—May 11.—Very heavy shower at 6 p. m., with strong wind from the southwest. Many trees and fences were blown down, and buildings unroofed and moved from their foundations.

Blooming Grove, Pennsylvania.—May 11.—From 6 to 6.15 p. m. thunder with much hail; no damage.

Fallsington, Pennsylvania.—May 11.—Thunder shower in the afternoon, and in the night severe gale and rain-storm.

Philadelphia, Pennsylvania.—May 11.—Rain, thunder and lightning with high wind, beginning about $5\frac{3}{4}$ p. m. A tornado passed across the northern portion of the city from west to east, beginning about Girard avenue, on the Schuylkill, tearing up trees in its course; unroofing about thirty dwelling-houses, and in some instances throwing down the walls. The walls generally fell outward. The tornado began about $4\frac{3}{4}$ p. m,, and continued about half an hour. The rain-storm continued all night.

Siegfried's Bridge, Pennsylvania.—May 2.—Pears in full bloom. 7th. Apples in full bloom. 16th, quinces in full bloom.

Tioga, Pennsylvania.—May 12.—Ground covered with snow this morning, about half an inch on the low land and two inches on the hills; froze quite hard. 16th, apple trees in bloom.

Sykesville, Maryland.—May 11.—Half past 2 p. m. very heavy black cloud to the southwest; 4 p. m. raining in torrents; 4.20, hail an inch in circumference; thunder very heavy and lightning very vivid. The wind changed to the northeast about half past 5, and brought another gust.

Woodlawn, Maryland.—May 11.—Day warm and sultry; sun very warm, with a gentle breeze from southeast. About 3 p. m. a cloud arose in northwest, spreading and growing dark. At $4\frac{1}{2}$ p. m. the wind changed to northwest, and increased rapidly, and about 4.45 the rain began. At the same time a violent wind blew from the west-northwest, blowing down fences and uprooting trees. The axis of the storm crossed the Susquehanna river about seven miles south of the Pennsylvania line, and passed up the valley of Basin run to Henry's run, and up the latter about a mile and a half, then changed its course to a southeasterly direction, destroying a large number of forest and fruit trees in its course, and throwing down a large amount of fencing. The violent part of the storm was confined to a narrow space, not exceeding one hundred yards. Thunder and lightning accompanied the storm, but none of it near; the lightning behind dark clouds, so that the exact direction could not be ascertained. Duration of violent wind about twenty minutes, thunder (distant) and lightning continued to northeast till about 9 p. m. The 12th was the coldest day of the month, except the 1st.

Washington, D. C.—May 11.—Cool wind began about 4.35 p. m. The temperature fell four and a half degrees in five minutes, and continued to descend. Rain from 6 p. m. of the 11th to $4\frac{1}{2}$ a. m. on the 12th. Temperature at 2 p. m. on the 11th, 82°; at the same hour next day, 62°.

Ashland, West Virginia.—May 10.—Thunder-storm, with violent hurricane, at 6 p. m., direction from west to east; lightning zigzag, lasting about one hour. Width of path from six to ten miles. Rain continued till 5 p. m. of the 11th.

Hilton Head, South Carolina.—May 11.—Shower at 7 p. m., accompanied

with thunder and lightning. No other shower from the 8th till the 20th. Temperature at 2 p. m. on the 12th, 72°, which was lower than at the same hour on any other day of the month, except the 2d and 3d, and 11° lower than at the same hour on the 11th.

London, Laurel county, Kentucky.—Thermometer at 2 p. m. on the 10th, 75°; at the same hour on the 11th, 51°—a fall of 24°.

Chilesburg, Kentucky.—Temperature at 2 p. m. on the 10th, 74°; at 2 p. m. on 11th, 46°. The 11th was the coldest day of the month. Frost on the 12th, with considerable ice. Thermometer below 32°, but rose to 40° by 7 o'clock. This frost has done great damage; it has killed tender garden vegetables, bit the corn that was up, and killed most of the grape-shoots. Grapes on wire suffered more than those on wooden trellises, but they were in a more exposed situation. There was also a considerable frost on the 13th. These frosts did no damage at Red River Iron Works, twenty-five miles east of this place. 31st. May has been a very bad month for farming operations in this region, the ground too wet to be worked.

Louisville, Kentucky.—Thermometer at 2 p. m. on the 10th, 60°; at the same hour on the 11th, 42°; the 11th was the coldest day of the month. Rain on the 8th, 9th, 10th, and 11th, amounting to 3.38 inches.

Urbana, Ohio.—May 11.—Mean temperature 38°, being 5° colder than any other day of the month. On the morning of the 12th thin ice and heavy white frost. All tender plants injured.

Westerville, Ohio.—The month of May has been unusually wet; showers very frequent.

Hillsboro', Ohio.—May 11.—Coldest day of the month. May 12, thermometer 32° at sunrise; severe frost. The amount of rain the largest monthly amount since the observer has kept a record.

Kingston, Ohio.—May 11.—This evening has the appearance of the end of a very wet spell. 12th, a severe frost this morning; at 6 o'clock the thermometer stood at 32°. The 11th was the coldest day of the month.

Kelley's Island, Ohio—May 5.—Peach, cherry, and plum trees in full bloom. 11th, coldest day of the month. 12th, white frost reported in some localities back from the lake; could find no trace near the shore; saw one instance where Delaware grapes were touched by frost; leaves wilted. 15th, pear and apple trees in bloom.

Austinburg, Ohio.—May 11.—Coldest day of the month.

Portsmouth, Ohio.—More water has fallen this month than before known to the oldest settlers. Three inches and eight-tenths fell from the 8th to the 11th. The 11th was the coldest day of the month.

Ripley, Ohio.—Four inches and ninety-hundredths of rain fell from the 8th to the 11th.

Toledo, Ohio.—May 11.—Coldest day of the month. 12th, frost in the morning; ice formed in favorable places; tender vegetation frosted.

Cleveland, Ohio.—May 11.—Coldest day of the month. 12th, hard frost last night; much injury to fruit; some ice.

Lisbon, Ohio.—May 11.—Rain nearly all day; spit snow several times. 12th, very hard frost; all tender vegetation killed. A large portion of the cherries, plums, peaches, &c., killed in low grounds.

Cuyahoga Falls, Ohio.—May 12.—Last night a hard freeze; almost all kinds of fruit are nipped; the grape-vines around the orchard are hanging down black.

Wooster, Ohio.—May 12.—This section of country was visited by a severe

frost this morning, which did much damage to fruit. Grapes are entirely killed. Wheat is not injured. The 11th was the coldest day of the month.

Saybrook, Ohio.—May 12.—Heavy white frost last night; ice formed a sixteenth of an inch thick, (sheltered;) mercury at sunrise marked 28°; ground stiffened in some places. The 11th was the coldest day of the month.

Bethel, Ohio.—The mean temperature of the 11th was seven degrees colder than that of any other day of the month. Boards and fences white with frost on the morning of the 12th; thermometer at 5 p. m. 33°.

Welshfield, Ohio.—May 6.—Apples in bloom; coldest day of the month. 12th, severe frost; water froze to the depth of a quarter of an inch; killed about one-half of all the fruit crop, and injured a few pieces of very early wheat. 17th, quince in bloom. 31st, the arrival of birds in the month of May was, on an average, about eleven days earlier than usual, and more nearly simultaneous than in previous years, occupying only the first nine days, and the number arriving is fully double that of last year.

Manchester, Michigan.—May 11.—Coldest day of the month. 12th, heavy frost last night; cherry trees in full bloom, and fully one-half of the buds killed, also about half the currants.

Monroe, Michigan.—The 11th was six degrees colder than any other day of the month; during the night water in shallow dishes out of doors froze an eighth of an inch thick; nothing was injured, however, but a few early tomatoes.

Pontiac, Michigan.—May 11.—Coldest day of the month. 12th, frost; ice three-eighths of an inch thick; ground frozen.

Lansing, Michigan.—May 11.—Coldest day of the month.

Homestead, Michigan.—The coldest day of the month was the 10th; hard frost on the morning of the 11th.

Spiceland, Indiana.—May 11 was the coldest day of the month; considerable frost on the morning of the 12th.

Pennville, Indiana.—May 12.—Severe frost at 5 a. m.; leaves and grass frozen; ice on standing water; thermometer 28°.

New Harmony, Indiana.—The 11th was the coldest day of the month.

Indianapolis, Indiana.—The 11th was the coldest day of the month.

Vevay, Indiana.—The 11th was the coldest day of the month. 12th, heavy setting fog from 4.30 to 8.30 a. m.

Rensselaer, Indiana.—White frost on the morning of the 12th; it did no injury. The fall of the thermometer on the 10th and 11th seems to have been less here, compared with the earlier days of the month, than at other stations.

Springfield, Illinois.—No rain, except very slight, the whole month; ground very dry.

Sandwich, Illinois.—May 11.—Hard frost; pears destroyed; Richmond cherries injured; early apples suffered slightly. Ice five-eighths of an inch in thickness. 31st, the month, except the frost on the 11th, has been a very favorable one for agriculture.

Elmira, Illinois.—May 11.—Heavy white frost; anchor ice; fruit probably injured, as apple trees were about in full bloom.

Wyanet, Illinois.—May 11.—Heavy white frost; some ice; plums, cherries, &c., hurt. 13th, considerable frost on boards and straw.

Tiskilwa, Illinois.—May 11.—Frost this morning on straw, boards, &c.; grass did not appear frozen. 12th, a little frost visible this morning on old straw.

Augusta, Illinois.—May 4.—Wild cherry and hazelbush in leaf; oak, elm, thornbush, poplar, and cottonwood begin to leaf; buckeye in flower. Farmers have not ploughed much yet for planting; it is too wet. 5th, lilac begins to bloom.

11th, mercury 33° at sunrise; white frost. 13th, ground dry enough for ploughing in most places. Hawthorn and mountain ash in flower. 22d, syringa and spirea in flower.

Peoria, Illinois.—Mulberry in flower the 8th of May, locust the 25th, honey locust the 30th.

Winnebago, Illinois.—May 1.—Currants in blossom. 9th, wild plums and common cherries in bloom. 11th, severe frost, thermometer 28° at sunrise; ground frozen half an inch; currants and cherries injured, tender grape-shoots killed. 16th, apples in blossom. 30th, raspberries in blossom.

In Illinois the 10th or the 11th was the coldest day, and further west the 10th. At a few stations the 1st, and at two or three the 13th, was the coldest day of the month.

Allenton, Missouri.—May 12.—White frost; thermometer 32½° at 5 a. m.

Harrisonville, Missouri.—May 11.—Frost this morning, hickory buds and several tender things killed in most localities. 12th, a very light frost this morning.

Easton, Missouri.—May 10.—Heavy frost last night; killed potato vines, and in some places foliage of trees. Commenced to snow at five o'clock this morning, melting as it fell. Storm came from the northwest.

Rocky Run, Wisconsin.—May 11.—White frost and ice this morning. 17th, apples in bloom.

Embarrass, Wisconsin.—May 4.—Currants and plums commenced flowering. Hard frost on the 9th, 10th, 11th, 12th, and light frost on the 13th.

Bloomfield, Wisconsin.—May 11.—White frost. 19th, apple trees in blossom. 22d, lilacs in bloom.

Baraboo, Wisconsin.—May 14.—Wild plums in full bloom. 17th, cultivated apple, Siberian crab, and the wild crab, in full bloom. No rain except on the 17th, 18th, and 19th.

Green Bay, Wisconsin.—May 11.—White frost this morning, thermometer 26°.

Weyauwega, Wisconsin.—Frost on the mornings of the 11th, 12th, 13th, and 14th. The blossoms on early apple trees and plum trees destroyed; also, cabbages, tomatoes, and other vegetables.

Milwaukee, Wisconsin.—May 11.—Hoar frost and ice this morning.

Manitowoc, Wisconsin.—May 10.—Thermometer at midnight 32°; at sunrise on the 11th, 27°.

Kelso, Minnesota.—May 11.—Water froze four-tenths of an inch thick in a tub outside of the house.

New Ulm, Minnesota.—May 10, 13.—Ice an eighth of an inch thick in a water barrel, and on the 13th an inch thick in a gutter.

Saint Paul, Minnesota.—Ice formed on the nights of the 9th and 10th, but vegetation was not in a state of sufficient forwardness to receive any injury.

Afton, Minnesota.—May 14.—Frost very severe from the 9th to this morning; ice formed last night a quarter of an inch thick. No frost after to-day. 20th, heavy rain and thunder-storm this afternoon. The first rain at 6.30 was light, but large drops and great velocity, rapidly increasing, both wind, rain, hail, and lightning, until it became a perfect tempest, blowing down fences and smashing some windows. All level land was flooded in ten minutes, and every low spot was either a lake or a river.

Minneapolis, Minnesota.—May 20.—A thunder-storm began from SW. at 4.15 p. m., and at 4.55 a tornado came up from NW., demolishing parts of the walls of a brick block, and blowing down out-buildings, chimneys, trees, fences, &c., lasting about fifteen minutes, and attended by lightning, hail, and a powerful rain. While the rain was driving from the NW. the higher clouds were

still moving from SW., and a part of the time the rain seemed to come from both NW. and SW., at the same time thousands of rods of fence were blown down in the country, and in some instances rails were carried some distance. The last frost in May was on the 13th.

Monticello, Iowa.—May 11.—Severe frost this morning; the ground was frozen hard; temperature at five o'clock 26°. 13th, temperature at five this morning 29°; frost severe on low land; the fruit appears to be much injured. 30th, the weather is very dry, so much so that the crops are suffering for lack of rain, especially the grass.

Lyons, Iowa.—The month of May has been rather dry and cold.

Waterloo, Iowa.—May 9.—Some frost. 11th, heavy frost, and positive freezing last night; ice a fourth of an inch thick in vessels out of doors; nothing injured except tender plants. 13th, frost and ice this morning.

Guttenberg, Iowa.—May 2.—First swallows appear. 4th, willow leafing. 7th, black oak leafing. 10th and 13th slight frost in the morning. 15th, plum trees in full bloom. 25th, crab-apple and hawthorn in bloom. 31st, the month in general was very calm and dry, and the air not so transparent as usual, especially through the latter half, when dry mist prevailed.

Dubuque, Iowa.—May 7.—Plums and cherries in blossom. 11th, abundant white frost this morning. 12th, light frost. 13th, sharp frost. 17th, apple trees in blossom.

Iowa City, Iowa.—May 11.—Hard frost; ice thick as a case-knife.

Muscatine, Iowa.—May 3.—Plum trees in full bloom. 11th, thermometer at 4 a. m. 29°; at 5 a. m. 28°; light frost in a few places; ice a sixteenth of an inch thick; apple trees are in full bloom, and the fruit was considerably hurt.

Atchison, Kansas.—May 10.—Snow from five to six a. m. 11th, heavy white frost this morning, thermometer 30°; ice in well-bucket.

Fort Riley, Kansas.—May 9.—Dark and cloudy all day; a violent wind from the north commenced at 9 p. m. Snow began in the night and continued till 9 a. m. next morning, depth twelve hundredths of an inch. 24th, violent north wind from 4 to 6 p. m.

Manhattan, Kansas.—May 2.—Buckeye in blossom. 3d, heard night-hawk; choke-cherry in bloom. 9th, white oak in blossom. 11th, frost in the morning; mulberry in blossom. 14th, sycamore, basswood, and hickory in blossom. 15th, strawberries in blossom. 20th, saw fire-flies this evening.

Olatha, Kansas.—May 25.—Rain threatened all day. Clouds continually shifting (*cirro-cumuli;*) wind NW. all day, varying from 3 to 5. At 4 p. m. clouds rose thicker from the NW. At 5 p. m. a very dense cloud (*cumulus*) rose in strata and enveloped us in semi-darkness in fifteen minutes. Wind increased from 5 to 9 in the same time, when it commenced raining and blowing furiously at 5.20 p. m. from the N.NW. What followed can be described only by its effects. Every one's house in this vicinity was drenched; some were filled a foot deep with hailstones. Windows were entirely broken in and doors forced open, the south end of some houses carried outward; chimneys thrown down, roofs torn off, well-built houses twisted off the foundations, rickety buildings torn to shivers, and some reasonably good buildings turned over, smashed to pieces and the remnants strewn some distance. Gardens were destroyed, fruit trees ruined, the hail beating off the bark to the very ground. Men and women exposed to the storm were badly bruised, in some cases limbs broken, and one man has since died from the effect of injuries received. In the track of the worst gust the prairie grass was beaten off and no forage left for animals. The storm at its commencement was from the N.NW., but the track of the greatest desolation is from the W.NW. The creek running past us a little below, usually only a rivulet to be spanned by the foot, rose in an hour or less to

be eight or ten feet deep and as many rods wide. On the subsidence of the water, hail-stones were found drifted on the banks to the depth of several feet. Three days afterward, with the mercury ranging meanwhile at 60° to 85°, the hail was still lying unmelted, covered only with a little *débris*.

Nursery Hill, Nebraska.—In the night of the 10th water froze half an inch in the open air in all low grounds and along small streams. At 9 p. m. the mercury stood 36° in my nursery grounds on high prairie, while but fourteen rods distant in a spring ravine it was 24° at the same hour. This was the last frost of the month. It did much damage to fruit and crops on bottoms, very little on high land.

Elkhorn City, Nebraska.—May 3.—Cottonwood, maple, box, elder, and plum leafing. 6th, oak leafing, prickly ash and cherry blooming. 11th, a little white frost; ice. 16th, wild strawberry blooming. 19th, heavy dew, the first this season. 21st, pewee, first season that it has been observed here. 26th, elm seed ripe. 28th, wild raspberry blooming.

Earthquake in Sparta, Randolph county, Illinois.—On the evening of Sabbath, 28th May, about half past 8 o'clock, this county, and especially this locality, had a slight shock of an *earthquake*. A sudden jar or shake of buildings, with a sound like distant thunder, not lasting over two or three seconds. A similar concussion took place after midnight or early Monday morning. About 10 minutes to 7 a. m., on Monday, a third and most violent shock took place. In the city of Sparta and immediate neighborhood it was most alarming—a loud rumbling noise, like heavy thunder, with violent visible upheaving and shaking of the earth. A number of brick buildings were rent and shaken from their perpendicular. In frame buildings the brick chimneys were, if not totally thrown down, partially so, the upper part being thrown to the ground; and during a most perfect calm, trees were shaken and thrown round as with a most violent gale. People ran into the streets or fields expecting their houses to tumble about them, as they doubtless would had the shock lasted a minute or two, but it did not continue over ten seconds. Persons who were travelling in the stage felt nothing, but were astonished to see rail fences shaking and rails falling off as in a storm.

The rumbling noise and sound, as well as the movement of the earth, were in a northeast and southwesterly direction.

The sky, during the morning and at the time, was dull and hazy, and the sun, as it were, wading a mist. The barometer some days previously had kept very low (29^{25} to 29^{40}) without any rain falling. The day of the 27th May was warm and sultry, the thermometer at 1 p. m. being 84 in the shade.—*William Addison.*

Allenton, Missouri.—May 29.—At 6.30 a. m., while sitting at a table, I experienced slight tremulous shocks of an earthquake, lasting about thirty seconds.—*A. Fendler.*

Earthquake in St. Louis.—A little before 7 o'clock yesterday morning, May 29, the shock of an earthquake, lasting for nearly a minute, was felt in this city and at Carondelet and Alton. A good deal of alarm was excited. Persons not yet up were aroused by the shock, and houses exposed vibrated so much as to cause the overthrow of flower-pots, &c. Children were much frightened, and at Alton the bells of a clock were set in motion. There were three distinct shocks, the first being the most serious—the others following in quick succession. What effect may have been produced in the southeastern portion of this State, where such visitations have been quite common, is as yet unknown. The earthquakes at and around New Madrid are matters of history; there lakes of water suddenly became high land, and trees standing upon high ground were at once hidden from view, and the whole surface for a great many miles was

at once changed in position and appearance. The effects are visible at this day, and shocks are of frequent occurrence.—*St. Louis Republican, May* 30, 1865.

Warm Weather in England.—The London Shipping Gazette says the most of April, this year, (1865,) was the hottest April on record. The maximum temperature of the 27th was 81.4, and in the sun on the 22d the thermometer marked 125. The mean temperature was nearly 54 degrees, and that of April 27, 62.5 degrees, or the ordinary mean temperature of July 15, which statistics show to be generally the hottest day of the year.

JUNE, 1865.

Table showing the highest and lowest range of the thermometer, (with dates prefixed,) the mean temperature, and amount of rain, (in inches and tenths,) for June, 1865, *at the following places, as given by the observers named. The daily observations were made at the hours of* 7 *o'clock a. m. and* 2 *and* 9 *p. m.*

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
MAINE.								
				°		°	°	*In.*
Steuben	Washington	J. D. Parker	8	84	14	46	63.3	2.10
West Waterville	Kennebec	B. F. Wilbur	30	90	3, 6	52	67.8	1.35
Gardiner	do	Rev. F. Gardiner	30	87	3, 6	50	65.8	2.68
Lisbon	Androscoggin	Asa P. Moore	30	91	.....	.....	.....	1.45
Standish	Cumberland	John P. Moulton	4, 30	93	3, 6	54	65.7	2.30
Cornishville	York	G. W. Guptill	30	88	6	51	69.1	2.25
NEW HAMPSHIRE.								
Stratford	Coos	Branch Brown	17, 18	88	3	43	64.8	3.23
Barnstead	Belknap	Chas. H. Pitman	17	92	6	51	69.4	1.65
Claremont	Sullivan	S. O. Mead	4, 25	88	1	50	66.9	.....
VERMONT.								
Lunenburg	Essex	H. A. Cutting	19, 24, 25	92	7	32	67.3	2.75
Craftsbury	Orleans	Jas. A. Paddock	18	84	3	50	63.7	3.52
Middlebury	Addison	H. A. Sheldon	17	84	3	51	69.1	1.85
Brandon	Rutland	Harmon Buckland	25	92	.....	.....	.....	.....
MASSACHUSETTS.								
Topsfield	Essex	A. M. Merriam	30	91	5	50	70.6	1.87
Georgetown	do	Henry M. Nelson	30	91	5	50	69.3	.....
Newbury	do	Jno. H. Caldwell	4, 17, 30	92	2	51	69.6	.....
New Bedford	Bristol	Sam'l. Rodman	30	83	1, 2, 5, 6	57	68.8	1.54
Worcester	Worcester	Joseph Draper	30	85	15	56	70.5	1.72
Mendon	do	J. G. Metcalf, M. D.	30	89	5	54	70.5	1.40
Baldwinsville	do	Rev. E. Dewhurst	9, 17	85	2, 6, 15	52	67.5	2.50
Amherst	Hampshire	Prof. E. S. Snell	4, 17	87	3	56	69.2	2.94
Springfield	Hampden	J. Weatherhead	18	95	9, 15	51	69.8	3.74
Westfield	do	Rev. E. Davis	17	87	3	53	69.1	2.82
Richmond	Berkshire	Wm. Bacon	9, 17	92	11	55	72.7	5.40
Williams College	do	Prof. A. Hopkins	24	88	3	49	68.6	2.93
CONNECTICUT.								
Middletown	Middlesex	Prof. Jno. Johnston	3	92	6	57	72.2	2.41
Colebrook	Litchfield	Charlotte Rockwell	4, 25	86	6	55	69.3	.....

Table showing the range of the thermometer, &c., for June—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
NEW YORK.								
				°		°	°	*In.*
Moriches	Suffolk	Miss N. Smith	23	90	2	60	72.9	2.28
South Hartford	Washington	G. M. Ingalsbe	18, 25	90	3	58	73.0	3.99
Troy	Rensselaer	John Heimstreet	4	89	3	57	71.6	1.74
Fishkill Landing	Dutchess	Wm. H. Denning	30	90	9, 10	60	69.9	3.78
Garrison's	Putnam	Thos. B. Arden	4, 30	89	14, 15	59	70.0	6.54
Throg's Neck	West Chester	Miss E. Morris	18	90	6, 15	58	71.0	.....
Deaf and Dumb Inst	New York	Prof. O. W. Morris	3	94	15	62	77.1	10.42
Flatbush	Kings	Eli T. Mack	30	91	12, 15	58	72.2	3.58
Newburg	Orange	James H. Gardiner	30	90	6	61	.....	4.10
Gouverneur	St. Lawrence	Cyrus H. Russell	18	92	10	52	68.8	3.91
South Trenton	Oneida	Storrs Barrows	18	92	2, 14	50	70.2	5.40
Cazenovia	Madison	Prof. Wm. Soule	24	90	13	51	69.0	3.61
Sherburne	Chenango	Rev. J. R. Haswell	28	88	27	48	65.4	.....
Theresa	Jefferson	S. O. Gregory	18	90	10	51	67.4	4.04
Depauville	....do	Henry Haas	18, 19, 25, 29	86	11	55	68.2	.....
Oswego	Oswego	Wm. S. Malcolm	29	86	13	53	66.0	5.95
Palermo	....do	E. B. Bartlett	7	94	13	52	68.1	8.80
Baldwinsville	Onondaga	John Bowman	7, 17, 25	84	3, 28	54	67.4	.....
Skaneateles	....do	W. M. Beauchamp	25	89	13	52	68.4	.....
Auburn	Cayuga	John B. Dill	25	92	11	56	73.5	.....
Nichols	Tioga	Robert Howell	18	93	27	55	71.7	.....
Palmyra	Wayne	Stephen Hyde	25, 29	89	11	55	69.5	.....
Geneva	Ontario	Rev. Dr. W. D. Wilson	29	94	11	55	69.1	3.56
Rochester	Monroe	Dr. M. M. Mathews	25, 29	91	10, 11, 13, 27, 28	58	66.7	5.43
Buffalo	Erie	Wm. Ives	6	94	10	55	70.0	2.78
Jamestown	Chautauqua	Rev. S. W. Roe	6	92	12, 23	55	70.7	7.30
NEW JERSEY.								
Paterson	Passaic	Wm. Brooks	18, 30	94	12	59	74.1	7.11
Newark	Essex	W. A. Whitehead	18, 30	89	15	58	71.7	3.49
New Brunswick	Middlesex	Geo. W. Thompson	30	97	6	60	67.3	.....
Burlington	Burlington	John C. Deacon	30	89	6, 7, 12, 15	60	72.1	4.50
Moorestown	....do	Thos. J. Beans	5, 30	89	6	59	73.8	3.70
Seaville	Cape May	Barker Cole	30	92	12	59	74.3	1.80
Haddonfield	Camden	Jas. S. Lippincott	5	87	6	62	73.6	4.68
Greenwich	Cumberland	R. C. Sheppard	5, 30	86	6, 7, 12	63	73.8	1.82
PENNSYLVANIA.								
Fallsington	Bucks	Ebenezer Hance	5, 30	90	6, 15	61	73.3	3.70
Philadelphia	Philadelphia	Pf. J. A. Kirkpatrick	30	93	6	64	77.3	4.82
Germantown	....do	Thos. Meehan	4, 8	94	6, 11	61	.....	.....
Moorland	Montgomery	Anna Spencer	30	88	15	60	72.9	5.13
Dyberry	Wayne	Theodore Day	25	90	15	53	67.2	.....
Nazareth	Northampton	L. E. Ricksecker	13, 18	92	15	57	73.7	.....
North Whitehall	Lehigh	Edward Kohler	5, 30	90	24	57	72.7	.....
Oxford	Chester	Dr. Henry Duffield	9, 30	88	11, 15	62	74.2	5.66
Silver Spring	Lancaster	H. G. Bruckhart	5	93	15	56	75.2	.....
Mount Joy	....do	J. R. Hoffer	4	100	1, 11	69	80.0	2.80
Harrisburg	Dauphin	Dr. John Heisely	4, 5, 24, 29	91	15, 28	67	79.1	2.12

Table showing the range of the thermometer, &c., for June—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
PENNSYLVANIA--C'd								
				°		°	°	*In.*
Tioga	Tioga	E. T. Bentley	17	98	28	50	71.8	7.64
Pennsville	Clearfield	Elisha Fenton	5, 7	92	28	55	70.6	3.64
Connellsville	Fayette	John Taylor	5	92	11	60	74.1	------
Canonsburg	Washington	Rev. Wm. Smith, D.D.	7	88	27	56	71.6	6.65
DELAWARE.								
Wilmington	New Castle	Dr. Urban D. Hedges	5	92	12	63	74.2	3.30
MARYLAND.								
Annapolis	Anne Arundel	Wm. R. Goodman	30	91	6	65	77.3	2.15
Sykesville	Carroll	Miss H. M. Baer	5	91	6, 15	63	72.8	4.25
WEST VIRGINIA.								
Cabell Courthouse	Cabell	C. L. Roffe	18, 29	90	1	56	74.6	3.63
MISSISSIPPI.								
Natchez	Adams	Robert McCary	6, 7, 10, 24	87	27	65	78.5	3.14
KENTUCKY.								
Louisville	Jefferson	Mrs. L. Young	18	91	1	54	75.6	3.86
Chilesburg	Fayette	Dr. Sam'l D. Martin	5, 6, 7, 23, 24, 29	88	1, 26	64	75.0	4.05
OHIO.								
Saybrook	Ashtabula	Jas. B. Fraser	7, 25	90	10, 11, 21, 22, 27	58	71.6	------
Austinburg	....do	E. D. Winchester	25	90	11, 21, 27	57	71.0	2.90
New Lisbon	Columbiana	J. F. Benner	5, 6	98	1, 11	62	77.5	6.27
Welshfield	Geauga	B. F. Abell, A. M	5, 6, 17	90	10	56	73.3	6.32
Wooster	Wayne	Martin Winger	6	93	10	59	74.6	------
Norwalk	Huron	Rev. A. Newton	18	92	27	57	72.4	4.08
Kingston	Ross	Pf. John Haywood	6, 18	92	1	62	75.9	3.42
Marion	Marion	Dr. H. A. True	24	94	10	59	75.0	3.37
Urbana University	Champaign	Pf. M. G. Williams	6, 23	90	1, 10, 11	60	74.5	5.06
Hillsborough	Highland	J. McD. Mathews	6, 18	87	27	58	73.4	4.01
Bethel	Clermont	Geo. W. Crane	6	91	21, 27	60	73.2	2.23
Eaton	Preble	Miss O. Larsh	5, 24	87	27	60	73.0	3.49
Cincinnati	Hamilton	R. C. Phillips	24	93	27	63	77.8	1.88
College Hill	....do	John W. Hammitt	6, 7	92	1	60	75.2	2.00
MICHIGAN.								
Pontiac	Oakland	James A. Weeks	6	90	26	52	71.1	------
Monroe	Monroe	Miss F. Whelpley	17	90	26	54	73.8	1.92
Manchester	Washtenaw	Dr. F. M. Reasner	5, 6, 18	94	26	52	72.5	------
State Agric'l College	Ingham	Prof. R. C. Kedzie	18	90	10	52	70.8	3.55
INDIANA.								
Vevay	Switzerland	Chas. G. Boerner	24	97	1	63	77.6	2.45
Pennville	Jay	Miss Miriam Griest	6	94	27	57	72.9	------
Indianapolis	Marion	W. W. Butterfield	6, 23	91	27	63	74.8	------
Rensselaer	Jasper	Dr. J. H. Loughridge	24	94	10	52	74.1	6.80
New Harmony	Posey	John Chappellsmith	5, 6, 7, 24	91	26	67	78.2	3.29

Table showing the range of the thermometer, &c., for June—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
ILLINOIS.								
				°		°	°	*In.*
Chicago	Cook	Samuel Brookes	6	97	10	46	67.8	.....
Evanstown	....do	M. Harrington	6	92	10	48	69.9	3.71
Marengo	McHenry	O. P. & J. S. Rogers.	26	86	6, 8, 10	48	60.0	4.67
Riley	....do	E. Babcock	3	92	25	52	66.0	8.15
Ottawa	La Salle	Mrs. E. H. Merwin	5	95	10	53	73.9	5.17
Winnebago	Winnebago	James W. Tolman	6	90	26	51	71.4	4.66
Wyanet	Bureau	E. S. & Miss Phelps.	5, 6	90	11	49	71.6	4.47
Tiskilwa	....do	Verry Aldrich	5	92	26	56	71.9	.....
Elmira	Stark	O. A. Blanchard	5, 6	92	26	57	73.7	3.38
Hennepin	Putnam	Smiley Shepherd	6	91	11	50	71.0	.....
Peoria	Peoria	Frederick Brendel	5. 6	92	26, 27	61	75.1	1.86
Springfield	Sangamon	G. M. Brinkerhoff	24	94	26, 29	60	76.5	.....
Dubois	Washington	Wm. C. Spencer	24	93	26	55	71.8	3.50
Waverly	Morgan	Timothy Dudley	17, 24	90	26	57	74.2	2.65
Murraysville	....do	Dr. John and Miss Grant.	23, 24	95	25	56	74.9	3.29
Galesburg	Knox	Prof. W. Livingston	4, 5, 6	87	10	58	71.4	3.94
Augusta	Hancock	S. B. Mead, M. D.	4, 5, 6	89	26	57	73.6	6.77
WISCONSIN.								
Milwaukee	Milwaukee	I. A. Lapham, LL.D.	5	94	11	42	68.0	3.57
Green Bay	Brown	Friedrich Deckner	4	92	26	51	68.0	4.70
Embarrass	Waupacca	E. Everett Breed	2	100	27	42	67.5	5.92
Weyauwega	....do	John C. Hicks	2	94	9, 26	52	71.2	2.70
Baraboo	Sauk	M. C. Waite	2, 3, 4	91	26	48	70.6	7.75
Plymouth	Sheboygan	G. Moeller	2, 4, 5	95	26	45	68.1	3.20
MINNESOTA.								
Afton	Washington	Dr. & Mrs. Babcock	2	94	20	46	68.6	.....
St. Paul	Ramsey	Rev. A. B. Paterson	2	92	20	46	67.1	6.72
Minneapolis	Hennepin	Wm. Cheney	2	95	20	50	70.4	.....
Sibley	Sibley	C. W. and C. E. Woodbury.	2	94	21	48	71.8	3.65
IOWA.								
Lyons	Clinton	Dr. P. J. Farnsworth.	3, 5, 6	92	20	56	73.1	6.11
Dubuque	Dubuque	Asa Horr, M. D.	4, 5	91	10, 21	57	71.3	8.78
Muscatine	Muscatine	J. P. Walton	5. 17	91	26	54	72.5	3.69
Monticello	Jones	Chauncey Mead	3, 4, 5	90	20	54	69.0	9.02
Guttenberg	Clayton	Philip Dorweiler	4	89	20	57	69.2	.....
Mount Vernon	Linn	Prof. Alonzo Collins.	3, 4, 6	91	25	53	71.0	.....
Iowa City	Johnson	Prof. T. S. Parvin	6	88	26	54	74.9	6.96
Independence	Buchanan	A. C. Wheaton	3	94	.....	.....	68.4	3.03
Do	....do	D. S. Deering	4	87	26	52	69.0	.....
Iowa Falls	Hardin	N. Townsend	3	86	21	50	67.0	16.09
Algona	Kossuth	Dr. and Miss McCoy.	4	94	21	42	68.0	6.06
Davenport	Scott	George B. Pratt	5	88	26	58	72.0	3.43
MISSOURI.								
St. Louis	St. Louis	Dr. Geo. Engelmann.	24	96	26	63	77.5	5.21
St. Louis University	....do	F. H. Stunteback	24	95	26	67	78.9	4.40
Allenton	....do	Aug. Fendler	28	93	26	58	73.0	4.57

Table showing the range of the thermometer, &c., for June—Continued.

Place.	County.	Observer's name.	Date.	Max.	Date.	Min.	Mean.	Rain.
MISSOURI—Cont'd.								
				°		°	°	*In.*
Athens	Clark	J. T. Caldwell	13	81	5	49	66.5	1.81
Harrisonville	Cass	John Christian	6	90	25	60	76.1	11.86
Easton	Buchanan	P. B. Sibley	4, 5	92	25	61	.....	8.40
KANSAS.								
Olatha	Johnson	W. Beckwith	14	94	25	56	.....	15.80
Atchison	Atchison	Dr. H. B. & Miss Horn.	3, 21	96	26	57	73.4	.....

The table of averages for June will be given in our next issue, when fuller reports will have been received to make it more complete.